ARMOR AT WAR SERIES

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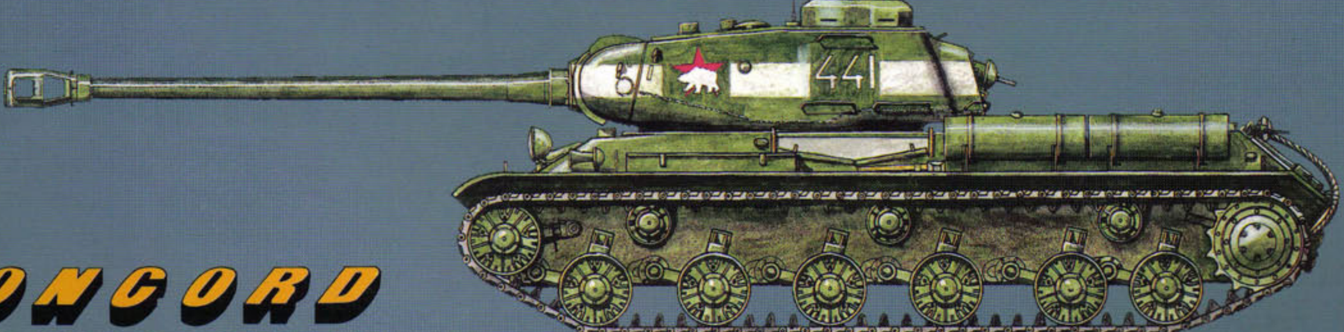
STALIN'S HEAVY TANKS 1941-1945

THE KV AND IS HEAVY TANKS

Steven J. Zaloga, Jim Kinnear
Andrey Aksenov & Aleksandr Koshchavtsev



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Authors Notes

The subjects of this book are Soviet heavy tanks in combat in World War 2 covering the T-35, KV series, IS-2, IS-3 and associated assault guns. This is a companion book to another in this series on Soviet medium tanks of World War 2 focusing on the T-34. This book has attempted to draw together a diverse selection of photographs to illustrate the evolution of the Soviet tank force during the Second World War, or as it is known in Russia, the Great Patriotic War. The core of this book consists of many new photographs, never before published, located in archives in Russia and central Europe. Photo research in Russia was conducted by Andrey Aksenov, Aleksandr Koshchavtsev, Mikhail Baryatinskiy and Rustem Ismagilov; by Janusz Magnuski in Poland; by Adam Geibel in the United States, and by Ivan Bajtos and Jiri Hornat in Czechoslovakia. The authors would also like to thank Stephen "Cookie" Sewell for his help on this project.

INTRODUCTION

Early Soviet Heavy Tanks

During the 1930s, the Red Army deployed a total of only 61 T-35 heavy tanks. This design, influenced by the British Independent and the French Char 2C of the 1920s, proved mechanically troublesome. By the late 1930s it was obvious that it was obsolete and in need of replacement. The Red Army's requirement for a new heavy tank was another multi-turreted monster little better than a modernized T-35. Fortunately, the designers offered more modern conceptions, based on their assessments of the lessons of the Spanish Civil War. The Leningrad design bureaus at the Bolshevik and Kirov plants were convinced that a new heavy tank would need heavier armor to survive against increasingly powerful anti-tank guns. They also doubted the idea of multiple turrets, which proved impractical to control in actual combat conditions. The first two prototypes, the T-100 and the SMK, had two turrets. But the Kirov design bureau was able to convince Stalin of the desirability of a heavy tank with a single turret and a more powerful gun. This was built in parallel as the KV tank, so named after Klimenti Voroshilov, one of Stalin's cronies and Defence Commissar at the time. All three tanks were dispatched to Finland in late 1939 to see how they would fare in actual combat conditions as part of a special company of the 20th Armored Brigade under Major P. Voroshilov, son of the Defence Commissar. They were used in the assault on the Finnish "Velikan" bunker complex near Summa where they enjoyed some success against the poorly armed Finns. However, the SMK drove over a large mine which blew off one of its tracks and buckled the belly armor. The remaining KV and T-100 tanks guarded the disabled tank while T-28 medium tanks made futile recovery attempts. The performance of the T-100 and SMK was disappointing, but the single turret KV tank was impressive. On 19 December 1939, Stalin ordered the KV tank into production as a result of the trials. The one change in the production scheme was the decision to build some of the tanks with a larger turret with a 152mm howitzer. This was based on the Finnish experience where there was a need for a bunker buster. At first, these versions were simply called the Small Turret KV and Large Turret KV, but they later were called KV-1 and KV-2. A prototype KV-2 was demonstrated in combat in Finland in early 1940.

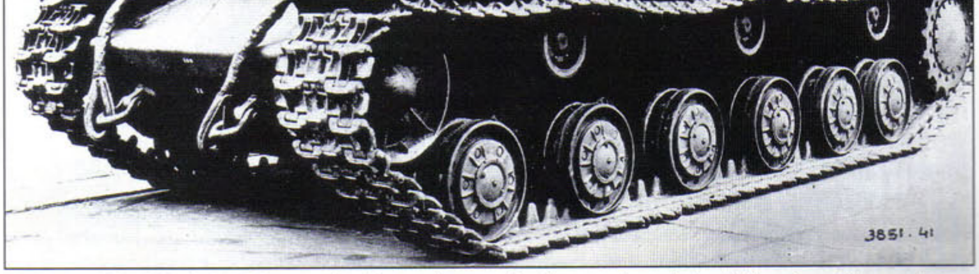
The KV-1 Heavy Tank

The first KV-1 tanks were issued to Red Army tank regiments in the summer of 1940. In total, 243 tanks were manufactured in 1940: 141 KV-1 and 102 KV-2 at the Leningrad Kirov Plant (LKZ). Series production of the KV also began at the Chelyabinsk Tractor Plant (ChTZ) in the spring of 1941. The early production KVs were plagued with mechanical problems. The vehicle was very difficult to steer and the engine did not provide its rated horsepower. In addition, the short L-11 76.2mm gun did not meet its specifications, but the acceptable F-32 gun did not become available until late in 1940. Ironically, the medium T-34 tank began to receive the superior F-34 76.2mm gun in the spring of 1941. Permission was granted to mount this type on the KV, where it was designated ZIS-5.

Early in 1941, Soviet intelligence mistakenly suggested that the Wehrmacht was adopting much more powerful anti-tank guns and thicker tank armor as a result of their experiences in France in 1940. In fact, the German Wehrmacht were still behind in these fields, only beginning to deploy the 50mm PaK 38 in 1941, and still not having a tank gun capable of defeating either the Soviet T-34 or KV frontally in combat. The mistaken assessment had tragic consequences as it prompted the head of the Soviet artillery administration to slow production of existing anti-tank guns and tank ammunition in favor of new more powerful weapons that were not ready when war broke out. The desired gun was the 107mm gun, and even the large KV tank had to be redesigned to accommodate it. This led to various prototypes of the KV-3 with thicker 90mm armor. The KV-3 was scheduled to go into production in August 1941 with the new ZIS-5 gun. Also under trials was the advanced Obiekt 220 design, comparable to the later Tiger 1 in armor and gun performance. It was to be armed with the new F-30 85mm tank gun or the F-39 107mm tank gun. However, the war broke out before these designs could go into production, and they were abandoned. Also abandoned were the programs for the KV-4 and KV-5 heavy tanks which were multi-turreted monstrosities ill-suited to modern tank warfare.

The scare over alleged new German tank guns led to a crash program in the spring of 1941 to fit appliqué armor to the KV-1 Model 1940. These 35mm appliqué plates were riveted to the turret with narrow spacing, better to combat certain new AP rounds. This version was called KV-1 s ekranami (literally, KV with screens); they are sometimes called KV-1E.

Stalin did not expect Hitler to attack the Soviet Union until 1942 at the earliest. As a result, the Red Army was in the throes of a major modernization of its tank force. Under the new order of battle, it would to consist of 29 mechanized corps with 61 tank divisions. The lack of adequate numbers of the new T-50 light infantry tank, T-34 fast cavalry tank, and KV heavy tank made these plans extremely unrealistic even in the 1942 time-frame. The new 1940 mechanized corps were organized around two tank divisions



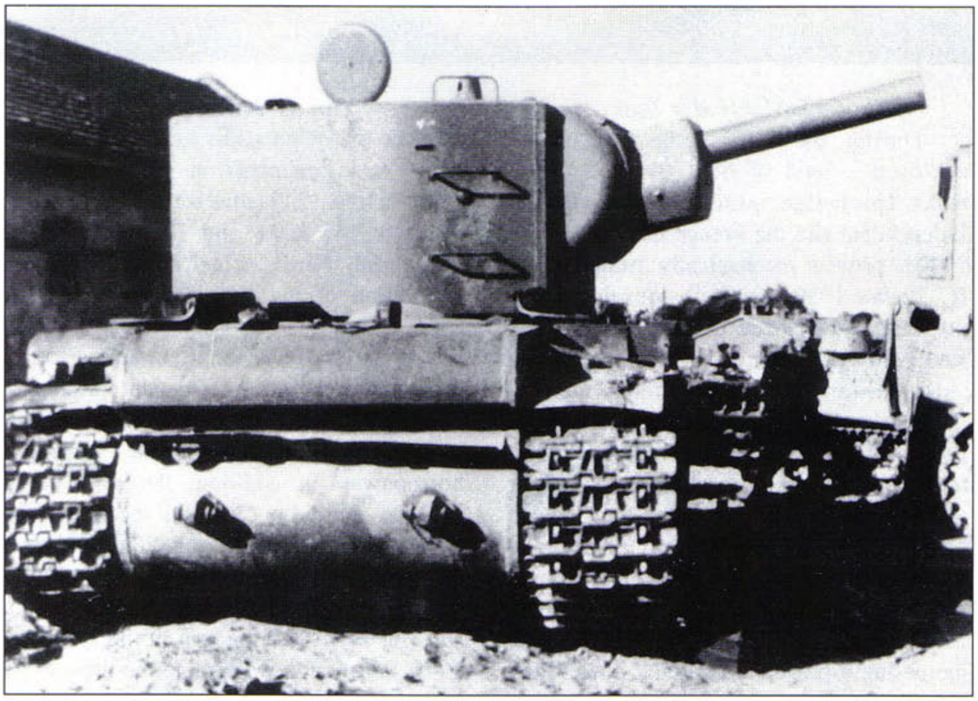
The KV-1 Model 1939 was the first series production version of the KV series. The prototype vehicle sent to Finland had a rounded turret and longer fender stowage bins, but these features were changed in favor of a simpler design for mass production. The original production vehicles had the short L-11 76.2mm gun, but this was replaced by the more effective F-32 gun in 1940. This tank, captured by the Germans in 1941, still has the tow cable wrapped with protective wax paper.

and one motorized division, with some 1,031 tanks. Each tank division had a paper strength of 63 KV heavy tanks, 210 T-34 mediums, 147 BT-7 cruiser tanks, 19 T-26 infantry tanks, 8 T-26 flamethrower tanks, 53 BA-10 armored cars and 19 BA-20 armored scout cars. There was supposed to be a battalion of 31 KVs in each tank regiment. This organizational structure required over 3,800 KV tanks, that is the equivalent of virtually the entire German tank force.

By the time that Germany invaded the Soviet Union on 22 June 1941, a total of about 700 KV tanks had been manufactured of which 508 were actually issued to the troops. Due to the novelty of the new equipment, the KV was distributed in large numbers to only a handful of units. For example, the 15th Mechanized Corps' 10th Tank Division had a full complement of 63 KVs, while the division's 37th Tank Division had only 1 KV. There were only six mechanized corps with a single battalion or more of KV tanks. The best equipped mechanized corps in terms of KV strength, the 6th Mechanized Corps, had 114 KVs which was still short of the official equipment tables. The KV was most commonly found in 6 of the 29 mechanized corps: the 3rd (52 KVs); 4th (99); 6th (114); 8th (71); 15th (64); and 22nd (31). Four of these were in the Ukraine with the Kiev Special Military District while the 3rd Mechanized Corps was in the Baltic Military District, and the 6th Mechanized Corps was in the Western Special Military District in Byelorussia.

Although the KV tanks offered significant technical advantages over contemporary German tanks, the Red Army had few crews trained on them. Most of the KV tanks had been delivered in the last three months before the war. There was only a tenth the required 76.2mm tank gun ammunition, there was no armor piercing ammunition for the 152mm gun on the KV-2, and no one had informed the KV-2 crews that they were expected to use old 09-30 152mm concrete-penetrating ammunition instead of the non-existent armor-piercing rounds. Some KV-2 units, for example the 41st Tank Division had no ammunition at all for their tanks. Finally, the KV-1 still had serious technical problems, particularly a troublesome transmission.

The Germans were shocked when they first encountered the KV in combat on 22 June 1941. The German infantry was aghast when the 37mm rounds from their 37mm guns simply bounced off the KV tanks. The 37mm gun was thereafter derisively nicknamed 'the door-knocker". The German panzer crews were equally alarmed when their 37mm, 50mm and 75mm guns all failed to penetrate the frontal armor of the KV even at close ranges. The tankers soon learned that the only way that the KV could be knocked out was by a close hit on the side or rear, or by a disabling hit against the track and running gear. German infantry had no such freedom of movement, and on numerous occasions, the KV tanks, lacking ammunition, simply drove over the German 37mm anti-tank guns. A tanker from Pz.Rgt. 1 recalled the battle on 24 June 1941:



A KV-2 Model 1940 of the 4th Mechanized Corps lies abandoned near Lvov, western Ukraine on 30 June 1941. The early KVs had serious mechanical shortcomings, which combined with poor crew training and fuel shortages led to widespread abandonment of undamaged tanks. A few of these KV-2s captured in June 1941 were shipped back to Germany for potential use as bunker busters during the planned amphibious assault on Malta. (US National Archives)

'The KV-1 and KV-2, which we first met here, were quite something. Our companies commenced firing at 800 meters but it was ineffective. We moved closer and closer...soon we faced each other at 50-100 meters. A fantastic exchange of fire took place without any German success...our armor-piercing rounds simply bounced off them. They drove right through us towards the infantry and rear services. We turned around and followed behind, where we succeeded in knocking some of them out with special-purpose rounds (Pzgr 40) at very close range: 30-60 meters!' The artillery of the 6th Panzer Div. had positioned itself on the heights overlooking the battlefield and made up for the poor showing of the 35(t) tanks against the KVs. The PzKpfw 35(t)s took a heavy toll of the lighter BTs and T-26s. Caught between the two Panzer divisions, the remnants of the Russian force were pushed into the swamps where they were easy targets. By nightfall, nearly 180 burning Soviet tanks littered the battlefield.'

One of the KV tanks involved in this battle was hit 70 times without a single penetration, and a single KV-2 held up a neighboring panzer division for a whole day while sitting astride a key road junction. Soviet commanders were very pleased with the performance of the KV tank. Maj. Gen. K. Rokossovskiy in his memoirs said: 'The KV tanks literally stunned the enemy. They withstood the fire of every type of gun that the German tanks were armed with. But what a sight they were on returning from combat. Their armor was pock-marked all over and sometimes even their barrels were pierced.' Gen. Maj. Morgunov wrote: 'Special mention should be made of the good work of the 4th, 8th and 15th Mechanized Corps who showed that a single KV tank was worth 10 to 14 enemy tanks in battle.' Gen. Lt. A. Yeremenko reported: 'Handled by brave men, the KV tanks can do wonders. In the sector of the 107th Motorized Infantry Division we sent a KV to silence an enemy anti-tank battery. It squashed the artillery, rolled up and down the enemy's gun emplacements, was hit more than 200 times, but the armor was unpierced even though it had been the target of guns of all types. Often our tanks went out of action due to the hesitant and unsure conduct of their crews rather than direct hits. For this reason we subsequently manned the

KV tanks with hand-picked crews.'

The only German weapons effective against the KV were the 105mm howitzer and the 88mm anti-aircraft gun. Although the 105mm howitzer could blow off the KV's tracks or otherwise damage it, even though it could not penetrate the armor of the KV. However, in spite of German technical shortcomings, German tactics were able to overcome the KV tank and its overall impact on the fighting in the summer of 1941 was negligible. Besides German tactical skill, the KV's effectiveness was undermined by poor crew training, high rates of mechanical breakdown, and a shortage of spare parts, fuel and ammunition. More KV tanks were abandoned due to breakdowns than were lost in battle. German technical intelligence reports concluded: 'Mechanically, this tank is a poor job. Gears can only be shifted and engaged at the halt, so the maximum speed of 35km per hour is an illusion. The clutch is too lightly constructed. Almost all abandoned tanks had clutch problems.' The tank's turret configuration was very poorly conceived, having the commander double up as the loader while at the same time the third turret crewman did nothing but man the useless rear machine gun. This could not be easily circumvented, since the rear turret position lacked any forward pointing vision devices or periscopes. KV commanders were overwhelmed with their tasks, had difficulty locating and identifying the enemy, and so KV tank attacks were less coordinated than German tank actions.

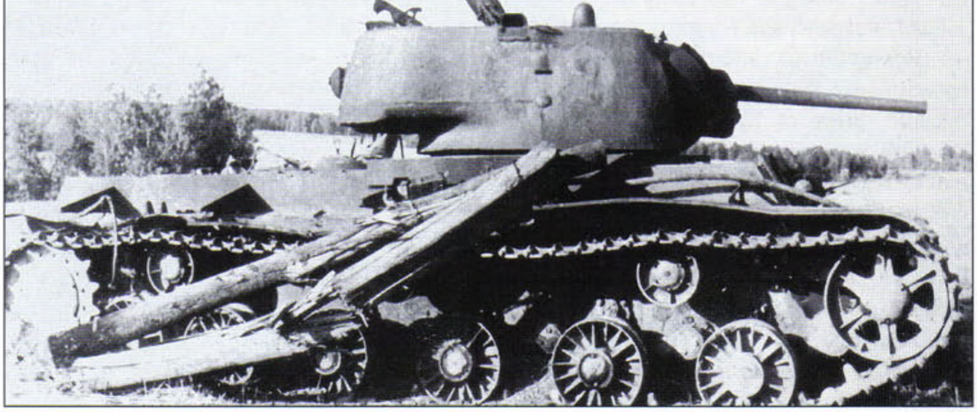
The initial German assaults succeeded in destroying most, but not all, of the Red Army's once massive tank force. The large mechanized corps and tank divisions, which had proven so unwieldy in combat, were disbanded. In their place, the Red Army formed tank brigades. The new brigades were consisted of a tank regiment and a motor rifle battalion with an official strength of 93 tanks. The tank regiment was a mixed formation including a company of 7 KV heavy tanks, and a company of 22 T-34 medium tanks, plus whatever light tanks were available to fill out the rest of the unit.

The KV tank was threatened with virtual extinction as Panzergruppe 4 raced through the Baltic towards Leningrad. Leningrad was the main center of KV tank production, and there was a real chance that the Germans would seize the city. As a result, the Soviet government ordered the evacuation of the Leningrad tank plants to Chelyabinsk, deep in the Urals, where efforts had been underway since 1940 to set up a second KV production line. This complex, later called Tankograd, or "Tank City" would produce all Soviet heavy tanks through the remainder of the war. The evacuation of the Kirovskiy Plant to Chelyabinsk was completed in mid October 1941. In 1941, 1,358 KVs were manufactured, of which 1,121 were KV-1s, 232 KV-2s, and the remainder prototypes. Of these, 629 were manufactured in Chelyabinsk. Due to the heavy losses incurred during the German invasion, the Red Army had only about 600 KV heavy tanks in service at the beginning of 1941 of the 1,600 that had been built.

The massive losses of tanks in 1941 forced the Red Army to concentrate on quantity over quality. Efforts to improve the design were shelved if they interfered with production. Several changes had already taken place in the later months of 1941. Production of the KV-2 ceased, as it was viewed as an unnecessary diversion of resources. The KV-1 already had a new turret design approved for production in 1941. The original welded production turret had 90mm frontal armor and 75mm side plates. The new turret, developed for the KV-3, was 90-120mm in the front, and 95mm on the sides. The up-armored welded turret resembled the earlier welded type except for the shape under the turret overhang where the panel continued further to the rear rather than bending around the turret race. Besides the turret change, there were also some modifications undertaken due to reports from the front. The most important of these was the discovery that the turret could be jammed by hits at the joint between the hull and turret. So small strips of appliqué armor were welded around the turret. Towards the very end of 1941, a new, less expensive spoked road wheel was introduced which lacked the internal rubber bearing of the original version. In July 1941, the first KV-1 Model 1941s were manufactured, armed with the new ZIS-5 76.2mm gun. These were produced in parallel with the KV-1 Model 1940s until stocks of the original F-32 gun ran out. Some were produced with the original welded turret, but most were produced with the uparmored welded turret.

Unlike the Germans, the Soviet did not use a detailed method to distinguish the sub-variants of the KV-1 except for a very irregular use of model/year designations. The external appearance of KV heavy tanks became more non-standard after the Leningrad evacuation until the supply of subcomponents stabilized. For example, there were two subcontractors producing turrets, one welded and the other a new cast turret. The Chelyabinsk and the Uralmash Plant in Sverdlovsk both produced KV hulls. Supplies of the nominally obsolete F-32 guns were shipped to Chelyabinsk, so a visitor to the factory could see a KV-1 with early hull and turret production features and the new ZIS-5 gun being built alongside a KV-1 with the new hull and turret features but with the F-32 gun. Some tanks were even fitted with aircraft radios when the tank radios were in short supply, and some KV-1s had the F-34 gun from the T-34 installed. This situation began to stabilize in 1942, and gradually all KV-1s were manufactured with the ZIS-5 or the essentially identical F-34. To speed production, one of the subcomponent plants began supplying cast turrets late in 1941 that were essentially similar in armor protection to the uparmored welded turret.

The KV-1 remained in demand in



A knocked out KV-1 Model 1942 with the uparmored cast turret. The KV-1 was used with diminishing success in the summer of 1942 during the disastrous tank battles in Ukraine near Voronezh. The new tank corps were badly mauled by the more experienced German panzer divisions. The KV-1 was singled out for criticism as the continual addition of armor to its design without engine improvements led to a tank that was much less mobile than the T-34, and too heavy to cross many rural bridges.

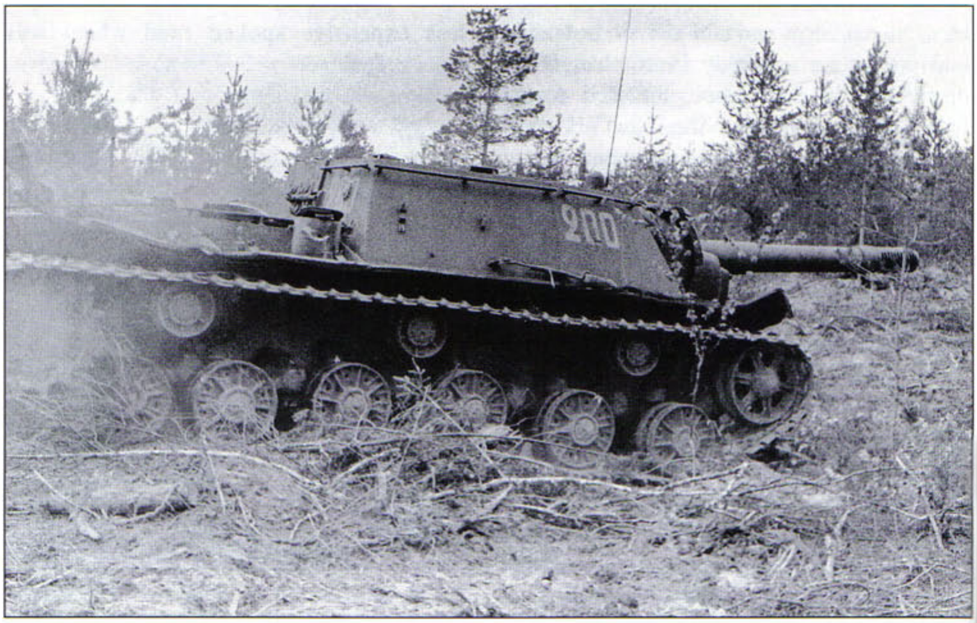
A platoon of KV-1 Model 1941 tanks of the 3rd Guards Tank Brigade during exercises in May 1942. This unit was formed in August 1941 as the 8th Tank Brigade which fought during the winter 1941 battles for Moscow. It was re-equipped in January 1942 on the Kalinin Front and given the honorary Guards designation for its distinguished role in the Moscow fighting. After heavy fighting against the German 3rd Panzer Army at Rzhev, it was re-equipped a third time in March 1942. In April it became one of the core units of the 7th Tank Corps, taking part in the summer 1942 battles near Voronezh.

Soviet tank units, as it was still capable of attacking Germany infantry almost with impunity. Soviet attitudes began to gradually turn sour against the KV through 1942. By the spring of 1942, the German units began to receive the long 75mm gun on the PzKpfw IV and the new PaK 40 75mm anti-tank gun that were capable of penetrating the KV-1s thick armor. The KV-1 tank's hull side armor plates were increased in thickness from 75mm to 90mm. The welded turret was finally dropped in favor of a standardized cast turret that was thickened from 100mm to 120mm at the sides. This became the definitive version of the KV-1 and was in service by the time of the great tanks in the summer of 1942 around Voronezh and Kharkov.

However, as additional armor was added to the KV, its mobility suffered. By the late spring of 1942, most Soviet tank brigades consisted of a mixture of KV heavy tanks, T-34 medium tanks, and T-60 light tanks. All three tanks required entirely different spare parts. In addition, the KV tank was too heavy to use many rural bridges, and it was too slow to keep up with the other tanks. The T-60 was even more unpopular, as its puny 20mm gun was useless against German tanks and its armor could be penetrated by virtually all German anti-tank weapons. The Soviet tank commanders began to press for a "universal tank". The idea was to develop a tank about as heavy and fast as the T-34, but with the thicker armor of the latest KV. However, this would not be ready for at least a year, and the Soviet tank commanders would have to fight the summer 1942 battles with the tanks they already had in hand.

The main innovation in the Soviet tank force in the summer of 1942 was not in tank technology, since there had been few improvements in Soviet tanks since the previous summer. Rather, Soviet tank commanders were becoming more experienced with the employment of tanks, and so the first tank corps were formed. Although called corps, these units were in fact about the size of a German, British, or American tank division. They were first committed to action in the disastrous battles in Ukraine in the summer of 1942. The early use of tank corps was a catastrophe. The army commanders did not have any appreciation of how to use them properly, and they were chopped up mercilessly by the more experienced German tank panzerwaffe. One of the clearest lessons to emerge from the summer battles was the difficulty of using the KV-1 tank in the new formations. The KV-1 was no longer invulnerable to German gunfire as it had been a year before, and its vices were all too apparent. Soviet tank commanders recommended that further production end and that they receive T-34s instead. One of the heavy tank designers candidly admitted "The KV-1 had completely discredited itself, and with that shame came the discrediting of the concept of heavy tanks as well."

Two steps were taken to remedy the situation. The KV-1 was redesigned to cut its weight and improve its speed. The new version was called the KV-1S with the S meaning skorostnoi, or speedy. Five tons of weigh was cut from the design by introducing a new, much smaller, cast turret. Hull armor was trimmed back to 1941 levels from 90mm to 75mm. The engine deck was cut down and light-weight roadwheels were introduced. A new powertrain was introduced to remedy the notorious problems with the KV clutch and



The most important sub-variant of the KV tank series was the SU-152 assault gun. These vehicles, manned by tank troops, were used to provide direct fire support of infantry and armored formations. This SU-152, probably of the 1539th Heavy SP Artillery Regiment of the 3rd Shock Army, 2nd Baltic Front was commanded by Lt. S. F. Berezin. (Soloviev) transmission. The turret layout improved the combat efficiency of the tank. The commander no longer served as the gunner, and was moved behind the driver with a new all-around vision cupola. Although it was an improvement over the KV-1 Model 1942, many Red Army officers wanted Chelyabinsk to shift completely to the T-34 and simply drop the KV. They argued that the new light weight KV-1S was little better than a T-34, but heavier and more expensive. As a compromise, part of the Chelyabinsk production line was shifted to T-34 production. But the KV-1S was accepted for production on 20 August 1942 and entered production later in the month alongside T-34s. To placate Red Army officers, in October 1942 the tank brigades began to be reorganized. They would be formed only from T-34 medium tanks and the T-60 or T-70 light tanks. All KV tanks were to be shifted to separate tank regiments which would be used primarily to provide infantry support. A total of 1,370 KV-1S were produced through April 1943 when KV production finally ended. Many KV-1S were delivered to regular tank brigades before the reorganization took effect. Among the first units so equipped were those earmarked for the Stalingrad counter-offensive. The best-known of these was the 121st Tank Bde. of the 62nd Army, later granted the title 27th Guards Tank Bde. for its excellent performance in that campaign. By the end of 1942, 4,167 KV heavy tanks had been built of which about 2,100 had been lost in combat. They would be found wanting once again in the great tank battles of the summer of 1943.

Universal Tank

Complaints from Soviet tank commanders about the difficulty of operating mixed tank formations led to the requirement in mid-1942 for a "universal tank" which was intended to combine the better features of the medium and heavy tank into a single common design. The tank designers at Chelyabinsk developed their KV-13 design while the T-34 design team at Nizhni-Tagil developed their T-43. While both designs had clear advantages over existing tanks, the universal tank concept failed to anticipate German counteractions to the T-34 and KV. The shocking disparity in tank quality between the Red Army and the Wehrmacht in the summer of 1941 prompted the Germans to develop two new tanks, the Panther medium tank and the Tiger I heavy tank. The Tiger was the first to appear on the Eastern Front, and a single example was captured on the Leningrad Front in January 1943. Once again, the Red Army was slow in reacting to the new design, as very few Tigers were encountered for the first six months of 1943. In the meantime, the tank designers began to examine new, more powerful tank guns, but the attitude of the Red Army and the tank industry was that quantity should still take precedence over quality, particularly expensive new innovations such as a heavier caliber main gun. This was not a unique event. The US Army also encountered the Tiger I in 1943, yet was unprepared as late as June 1944 to deal with the Panther and Tiger in Normandy in the summer of 1944.

The only major new KV variant at the beginning of 1943 was the KV-14, later called the SU-152. This was an assault gun armed with a 152mm ML-20 howitzer for direct fire support. With the Red Army ready to go over to the strategic offensive, there was a desire for mechanized weapons useful in breaching German defenses. The SU-152 was one of the first steps. An even heavier assault gun, the KV-12 with a 203mm howitzer, was rejected as impractical. Production of the first SU-152 began in March 1943, and the first heavy assault gun regiments were formed in May 1943. By April 1943, the unpopular KV-1S had been withdrawn from production at Chelyabinsk. A total of 704 SU-152 were manufactured through autumn 1943.

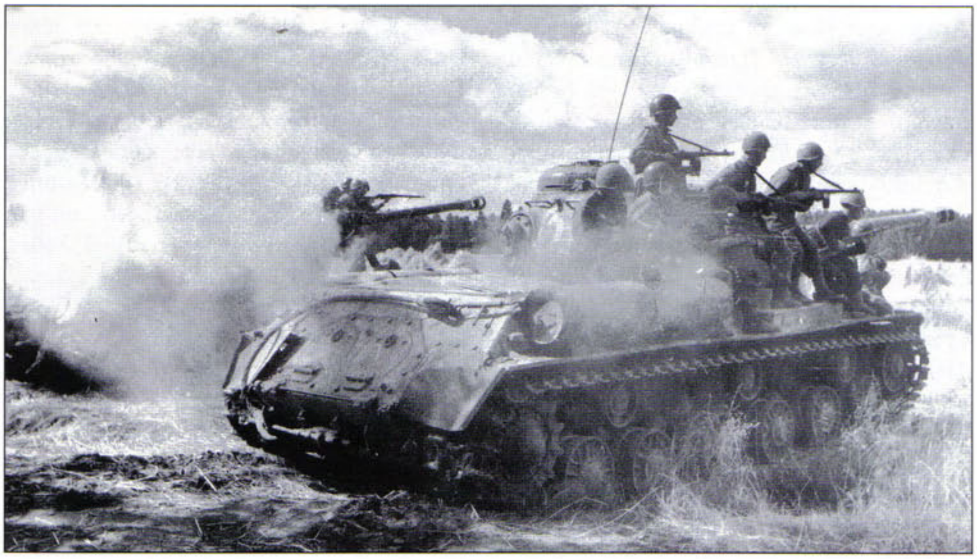
The Kursk-Orel battles of summer 1943 was the swansong of the KVs. They had failed to keep pace with German tank designs, especially in firepower. One of the Soviet designers ruefully remarked that the Red Army would have had an answer to the Tiger if they had only produced the Obiekt 220 from 1941. By the time of the Kursk battles, the KVs formed a diminishing share of the Soviet tank force with only 205 heavy tanks of 3,400 Soviet tanks on the Central Front. While the KV-1S could not penetrate either the Panther or Tiger at normal battle ranges, it was vulnerable to both types. The only bright spot was the SU-152. In three weeks of combat the first heavy assault gun regiment claimed 12 Tigers and seven Elefants, leading to its unofficial nickname of Zvierboi—Animal Hunter.

The IS-2 Heavy Tank

The failure of the KV during the summer 1943 battles led to a decision to shift to an entirely new design. The universal tank concept was dropped and the Red Army began work on an uparmed T-34 and a new heavy tank. In fact, preliminary work on a new heavy tank was already underway at Chelyabinsk. The design used some of the components of the KV-13 universal tank, but the new turret was larger to better accommodate a much heavier gun. As a stop-gap matter, the new tank turret was modified to fit on the KV-1S hull, and 130 tanks with this turret were built in the fall of 1943 as the KV-85. The new heavy tank project was named "IS" after Iosef Stalin. This is often mistakenly called JS, based on the German transliteration of the Russian alphabet which is not the same as the English transliteration. In German, Josef is pronounced "Yosef". Although called a heavy tank by the Red Army, the IS was in fact about the same size and weight as the German Panther medium tank.

There was some debate within the Red Army about the weapon needed for the new heavy tank. At first, the consensus was to arm the tank with an 85mm gun. This had performance similar to the German 88mm

An IS-2 knocked out by German forces in the summer 1944 fighting. The heaviest concentration of Guards heavy tanks regiments were in Ukraine where they spearheaded the July 1944 offensive towards Lvov. (US Army Ordnance Museum, APG)



An IS-2 carries a tank assault team forward during the fighting in the summer of 1944. This is a spring 1944 production vehicle, lacking the rear travel lock, but having the new pattern hand-holds.

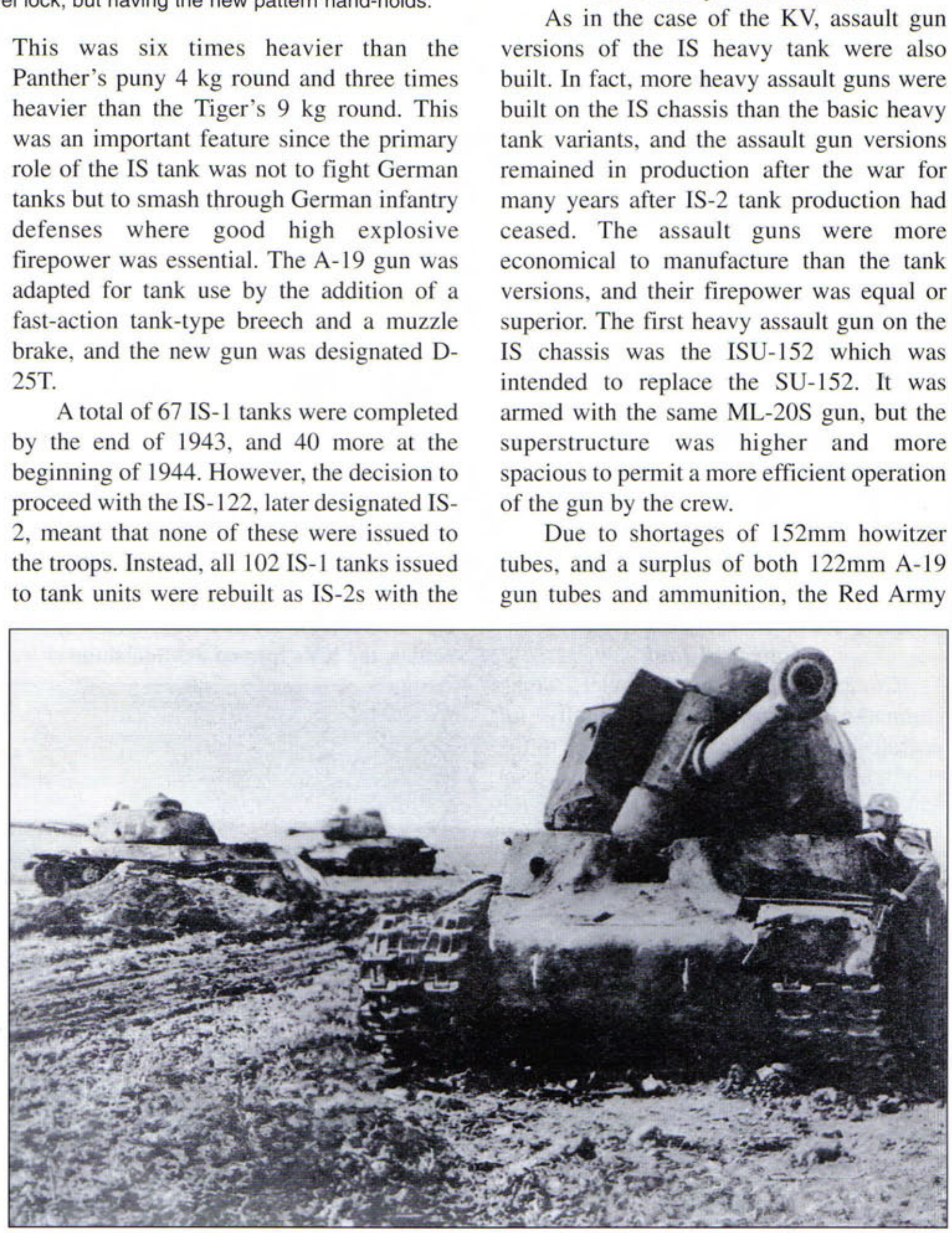
gun, and its ammunition was already in widespread production both for the SU-85 tank destroyer and for the 85mm anti-aircraft gun. The original version of the IS heavy tank with this gun, the IS-85, entered production at Chelyabinsk in December 1943. It was redesignated as the IS-1 shortly afterwards. However, before the IS-1 was issued to the troops, this matter was reconsidered. To begin with, the new T-34-85 tank would be armed with the same gun, so it made sense to give the IS a heavier weapon. The primary role of the new IS heavy tank was not tank fighting. The IS tanks were to be issued to special Guards heavy tank regiments. The role of these regiments was to assist in breaking through German defenses during offensive operations. It is worth noting that this was the primary tactical role of the German Tiger I. However, the Wehrmacht went onto the strategic defensive by the time that the Tiger I was available in significant numbers, so as often as not it was used in its secondary defensive role of combating Soviet tanks. The Stalin tank's tactical role had significant repercussions in the selection of a main gun. The best tank gun for the IS series from a tank-fighting standpoint would have been the new D-10 100mm gun being developed for a new tank destroyer. Although the IS was experimentally fitted with 100mm guns, this option was rejected. Production of 100mm ammunition was inadequate. The other option was a 122mm gun derived from the common A-19 field gun. This was attractive for two reasons. It offered good, though not great, anti-tank performance due to the sheer size of its projectile rather than the projectile speed. But more importantly, it was a fearsome direct fire weapon, firing a massive 25 kg high explosive projectile. This was six times heavier than the Panther's puny 4 kg round and three times heavier than the Tiger's 9 kg round. This was an important feature since the primary role of the IS tank was not to fight German tanks but to smash through German infantry defenses where good high explosive firepower was essential. The A-19 gun was adapted for tank use by the addition of a fast-action tank-type breech and a muzzle brake, and the new gun was designated D-25T.

A total of 67 IS-1 tanks were completed by the end of 1943, and 40 more at the beginning of 1944. However, the decision to proceed with the IS-122, later designated IS-2, meant that none of these were issued to the troops. Instead, all 102 IS-1 tanks issued to tank units were rebuilt as IS-2s with the 122mm gun. The first 150 IS-2s were finished in February, followed by 275 in March. Production of the T-34 was halted at Chelyabinsk in April in order to increase IS-2 production, which reached 350 that month. A new assembly hall was added at the Tankograd complex, and this added to production totals by spring. The first separate Guards heavy tank regiments (OGvTTP: otdelniy gvardeiskiy tyazheliy tankoviy polk) began to be formed in February 1944. These regiments had a total of 21 IS-2 tanks formed into four companies with five tanks each. Heavy tank regiments not given the Guards honorific were designated as separate breakthrough tank regiments (otdelniy tankoviy polk proryva).

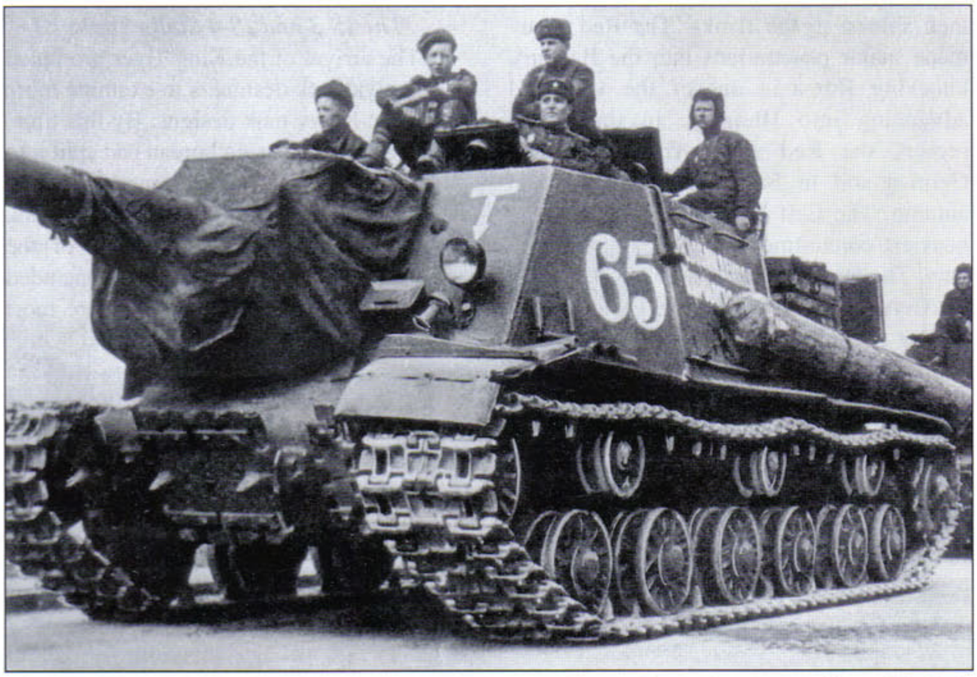
Stalin Heavy Assault Guns

As in the case of the KV, assault gun versions of the IS heavy tank were also built. In fact, more heavy assault guns were built on the IS chassis than the basic heavy tank variants, and the assault gun versions remained in production after the war for many years after IS-2 tank production had ceased. The assault guns were more economical to manufacture than the tank versions, and their firepower was equal or superior. The first heavy assault gun on the IS chassis was the ISU-152 which was intended to replace the SU-152. It was armed with the same ML-20S gun, but the superstructure was higher and more spacious to permit a more efficient operation of the gun by the crew.

Due to shortages of 152mm howitzer tubes, and a surplus of both 122mm A-19 gun tubes and ammunition, the Red Army



A German soldier inspects a knocked out IS-2. Although the IS-2 was largely impervious to the Panther and Tiger frontally except at close ranges, it was still vulnerable on its thinner sides. The tank in the foreground probably suffered an internal ammunition fire, as the front turret mantlet casting has been separated at the joint from the rest of the casting.



An ISU-152 of a Guards heavy SP artillery regiment advances forward on the outskirts of Berlin in April 1945. The slogan on the side reads "Osvobozhdennaya Kirovskaya" (Liberated Kirovskaya). The regimental tactical insignia on the front of the superstructure suggests that this vehicle is attached to a tank or mechanized corps which commonly used such insignia in the final months of the war.

decided to arm a portion of the heavy assault guns with the 122mm gun. There was no specific operational requirement for the different armament, and these heavy assault gun regiments were employed in the same fashion whether armed with the 152mm howitzer or 122mm gun. Two versions of the ISU-122 heavy assault gun were produced. The initial production from January 1944 to the end of the summer of 1944 were armed with the A-19S gun in a mounting identical to that on the ISU-152. However, late in 1944, production shifted to the ISU-122S, also called ISU-122-2, which used the D-25S gun. This gun was essentially the same as the gun used in the IS-2 tank, so it was fitted with a muzzle brake. In addition, it was placed in a new rounded mantlet which had superior traverse.

The first ISU-122 and ISU-152 separate Guards heavy self-propelled artillery regiments (OGvTSAP= otdelniy gvardeiskiy tyazheliy samokhodno-artilleriyskiy polk) were formed in February 1944. They were organized like the tank regiments, with 21 assault guns in four batteries. Regiments were homogenous, with either the ISU-122 or ISU-152 but not both types. A total of 53 heavy assault gun regiments were formed by the end of the war. The fighting tactics of the assault gun regiments were similar to the heavy tanks regiments and they were intended to support breakthrough operations against Germany infantry formations. They were used to destroy German strong-points and anti-tank defenses from long range. The ISU-122 could be used to provide overwatch firepower to defend against German heavy tanks. ISU production in 1944 totaled 2,510 vehicles, and an additional 1,530 up to June 1945 for a wartime total of about 4,075 vehicles.

The Stalins in Combat

The first combat use of the IS-2 regiments took place in April 1944 when Col. Tsiganov's 11th Guards Heavy Tank Regiment fought several skirmishes with the Tiger I tanks of the sPzAbt 503 near Tarnopol in support of the Soviet 6th Guards Tank Corps attack. A single IS-2 was lost during the fighting. At least one IS-2 regiment was used during a Soviet offensive operation in May 1944 in Romania, a strategic feint intended to distract the Germans from the main offensive in Byelorussia. These IS-2 heavy tanks encountered near Tirgu Frumos surprised the German panzer crews. A company of Tiger I tanks from Grossdeutschland Panzer Grenadier Division opened fire at 3,000 meters, and were shocked to see their 88mm rounds harmlessly ricochet off the thick frontal armor of the IS-2s. A counter-attack by Hptm. B. Klemz's company knocked out three IS-2 heavy tanks, earning Klemz the Knight's Cross. The Tiger crews concluded that the IS-2 was well armed, well armored, but somewhat slow and unmaneuverable compared to the Tiger I.

During the summer 1944 offensive operations, the IS-2 heavy tanks began to turn up in increasing numbers. The practice was usually to attach at least two IS-2 regiments to each front. One regiment was usually attached to a key army being used to secure a breakthrough, and the other to a tank corps for the exploitation phase of the operation. During the early summer offensive, Operation Bagration in Byelorussia, the separate Guards heavy tank regiments were still small in number. Only four IS-2 regiments could be allotted: 2nd (1st Baltic Front); 14th and 35th (3rd Byelorussian Front) and the 30th Guards Heavy Tank Regiment (1st Byelorussian Front). Two of these regiments were honored for their combat performance by being named for the towns they liberated, the 2nd Polotskiy and the 30th Brestskiy Guards Heavy Tank Regiments.

According to German tactical instructions, a Panther had to close to 600 meters to guarantee frontal penetration of IS-2 while the IS-2 had a fairly good chance of penetrating the Panther at ranges of 1,000 meters. The IS-2's thicker frontal armor protected it against Tiger I fire at ranges over 1,500 meters while the Tiger I was still vulnerable to IS-2 fire. However, the German tanks enjoyed superior fire controls to the Soviet tank, and so relative advantages and disadvantages of both tanks meant that victory in tank combat was largely due to the tactical situation and crew skill.

The new ISU heavy assault gun regiments were first deployed in significant numbers in June 1944 during Operation Bagration, with no less than fourteen Guards assault gun regiments assigned to the attacking fronts. There were three regiments with 5th Army and two with 49th Army, both part of an envelopment of the Byelorussian capital of Minsk. Eight regiments were honored by having liberated cities added to their unit name, three received the Order of the Red Banner and three the Order of the Red Star. The ISU-122 and ISU-152 also earned the reputation of being the deadliest enemy of the German Tiger I tanks. For example, of the twelve Tiger I tanks of sPzAbt 502 destroyed in the summer 1944 fighting in Byelorussia and the Baltic coast, about half could be attributed to ISU-122s or ISU-152s.

During Operation Bagration, the Red Army destroyed the German Army Group Center in the single most decisive rout of a German army group during the war. This operation was followed to the south by the Lvov-Sandomierz offensive through the Ukraine, and by late summer the Red Army had reached the eastern banks of the Vistula river in Poland. The main combat action then shifted to the flanks. The Red Army made major penetrations into the Balkans, knocking Romania out of the war, and advancing into Hungary. In the Baltic region, the Red Army finally reached German soil in East Prussia by the late autumn. The East Prussia fighting saw the heaviest commitment of IS heavy tanks to date. The tenacious defense of East Prussia by German units led to the need for the greater firepower of the Stalin heavy tanks and their related ISU heavy assault guns.

The evolution of the IS-2 continued through 1944. The mantlet of the IS-2, designed for the smaller 85mm gun, was not durable enough for the powerful 122mm gun, so a new wider mantlet was developed. In addition, a new front hull casting was designed which was easier to manufacture and more spacious. These changes plus other improvements were incorporated into the revised IS-2m, also called IS-2 Model 1944. These entered production in August 1944 at Chelyabinsk. The IS-2m was not seen in significant numbers until the January 1945 offensive as most were shipped to heavy tank regiments being reformed in the autumn of 1944 for the final offensives. A total of 2,250 IS-2s were manufactured in 1944. Increased production of the IS-2 permitted the formation of the more powerful Guards heavy tank brigades in December 1944. These were equipped with 65 IS-2 tanks, 3 SU-76 light assault guns, 19 armored transporters and 3 BA-64 armored cars based around three tank regiments. They were formed to spearhead assaults on fortified lines with heavy infantry and engineer support during the forthcoming January offensives.

The German King Tiger tank began to appear on the Eastern Front in August 1944. Engagements between the IS-2 and King Tiger were not common since there were so few King Tigers in service at any one time. There were some encounters between sPzAbt 503 and IS-2 regiments in Hungary in November 1944 outside of Budapest. On 12 January 1945 during the start of the Oder offensive, a company of Tiger IIs from sPzAbt 524 was wiped out in a savage short-range engagement with Stalin tanks near the village of Lisow.

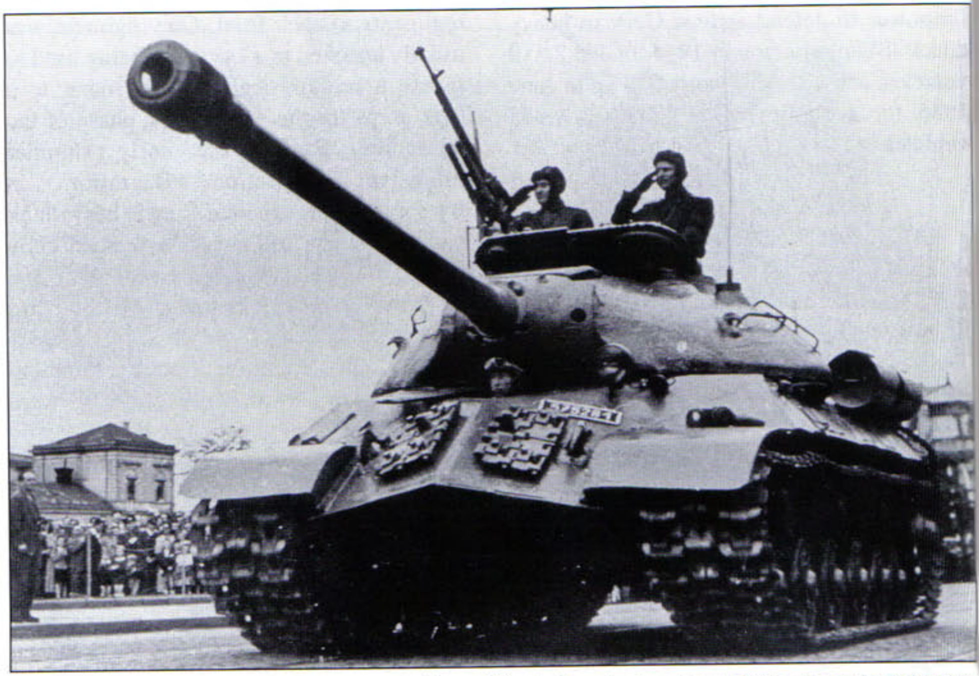
By the end of the war, the Red Army had about 5,900 KV and IS heavy tanks in service and 2,700 ISU heavy assault guns. In total, of the 10,500 heavy tanks available during the war, about 5,200 (49.5%) had been lost. Heavy assault gun production had totaled about 4,800 vehicles of which 2,300 or 46% had been lost in combat.

The IS-3 and IS-4 Stalin Tanks

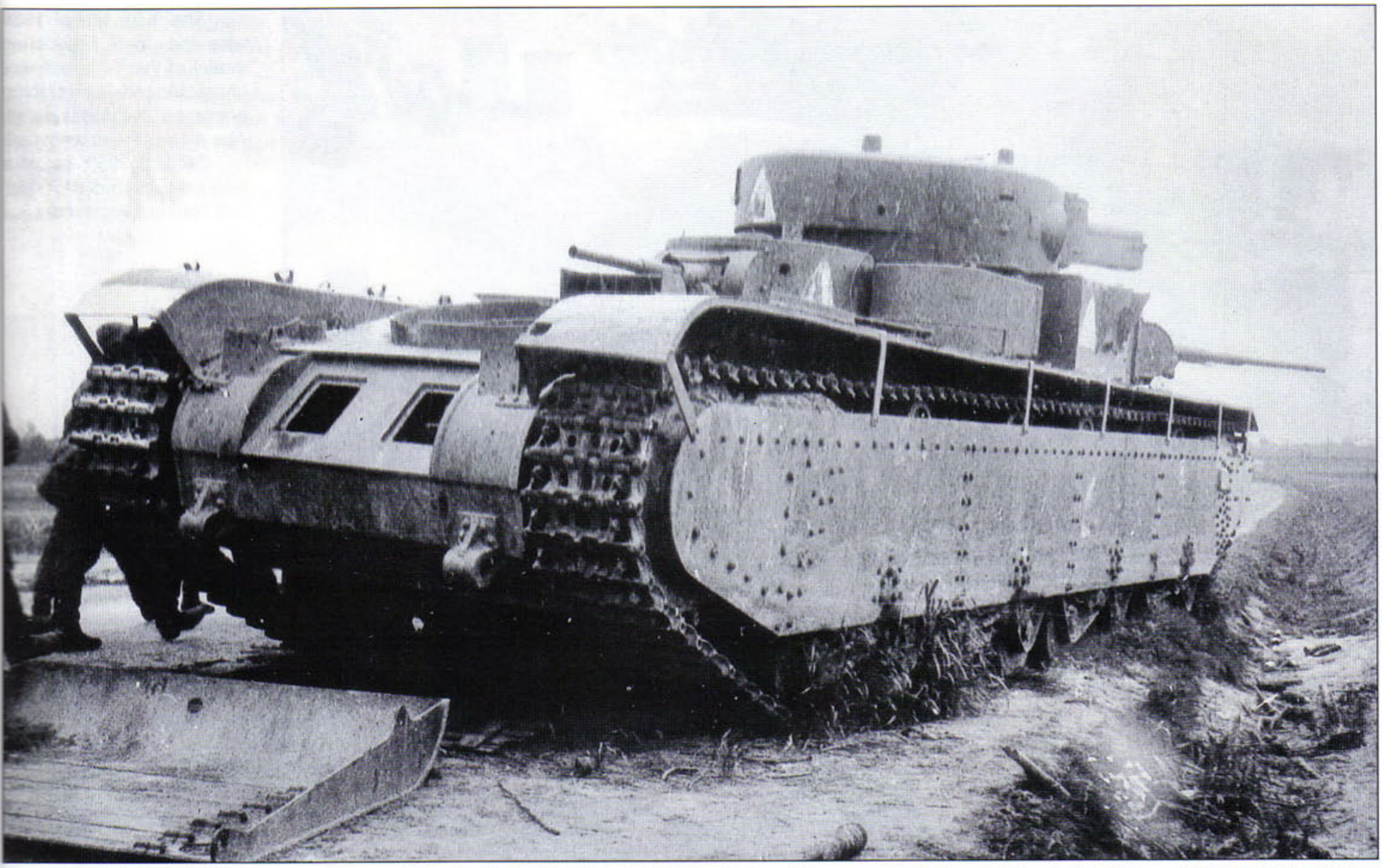
The arrival of the King Tiger prompted the Chelyabinsk designers to examine more advanced heavy tank designs. By this time, the Chelyabinsk design bureau had split into two rival teams, so two separate design efforts were pursued. The Kirovets-1 tank was designed around the lessons of the Kursk battle. Soviet engineers concluded that the hits on the turret front were most often the cause of tank loss, followed by hits on the hull front. So the Kirovets-1 design placed the emphasis on a radical new turret with 200mm armor, and a new hull front design. Two competitive designs were amalgamated in October 1944, and production was authorized to begin. However, the thick new armor proved difficult to manufacture, and the first series production examples of the new tank did not begin to roll off the assembly lines until May 1945. Once accepted for service, the new tank was called the IS-3. Although older Soviet accounts claimed that the IS-3 took part in the Berlin fighting, recent research conclusively shows that none were ready before the war ended. Recent research in Russia indicates that that IS-3 heavy tanks were used in small numbers in the August 1945 assault on the Japanese in Manchuria. The IS-3 was first publicly displayed at a victory parade in Berlin on 7 September 1945 which involved 52 IS-3 tanks from the 2nd Guards Tank Army. Aside from a very small number of IS-3s produced in 1945, large scale production of the IS-3 did not take place until 1946 and a total of 2,311 were completed.

Parallel to work on the IS-3, a less radical design was undertaken which was not limited by the severe weight constraints imposed on the IS-3 designs. Although several prototypes with different armament features were completed before the end of the war, manufacture of the new design was not ready until 1947. The new heavy tank was accepted for quantity production as the IS-4 tank in 1947. Only 200 IS-4 were built due to the feeling that the speed and mobility of the IS-4 were not sufficient. After the outbreak of the Korean War in the summer of 1950, seven IS-4 regiments were shipped to the Far East to serve with a tank army that Stalin was organizing to intervene in the Korean conflict. Stalin later decided against intervening in Korea for fear it would result in the outbreak of a general war with the nuclear-armed American armed forces. The IS-4s remained in the Far East for the next two decades prior to their retirement, and they remained one of the most secret Soviet tanks ever actually deployed.

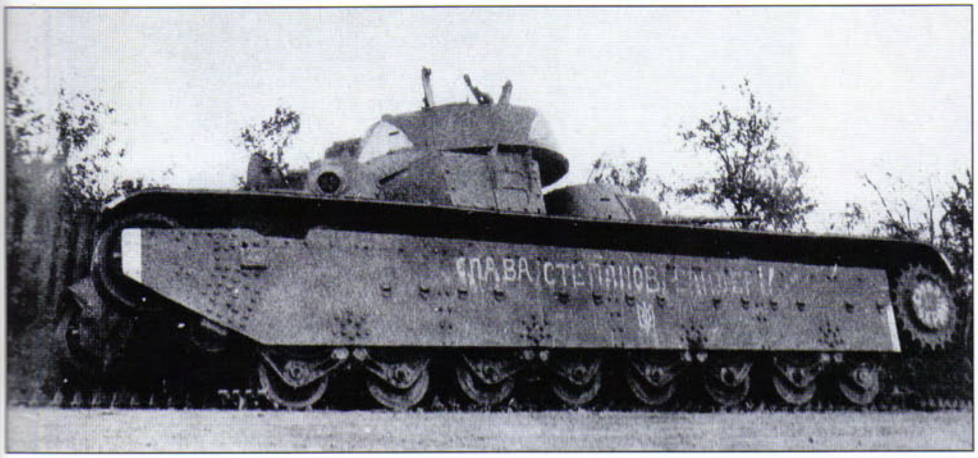
The IS-2m and IS-3 were modernized in the post-war years. Shortcomings in the IS-3 led to a rebuilding program in 1949 to correct defects. In 1954, the IS-2s were modernized as the IS-2M. The IS-2M had new external hull stowage bins on the front hull side and new dust skirts as well as other improvements. A parallel modernization program for the IS-3M began in 1959-1960. Several foreign armies received the IS-2 in the post-war years including China, Cuba and North Korea. Egypt, China, and North Korea were supplied with the IS-3M heavy tank in the 1960s.



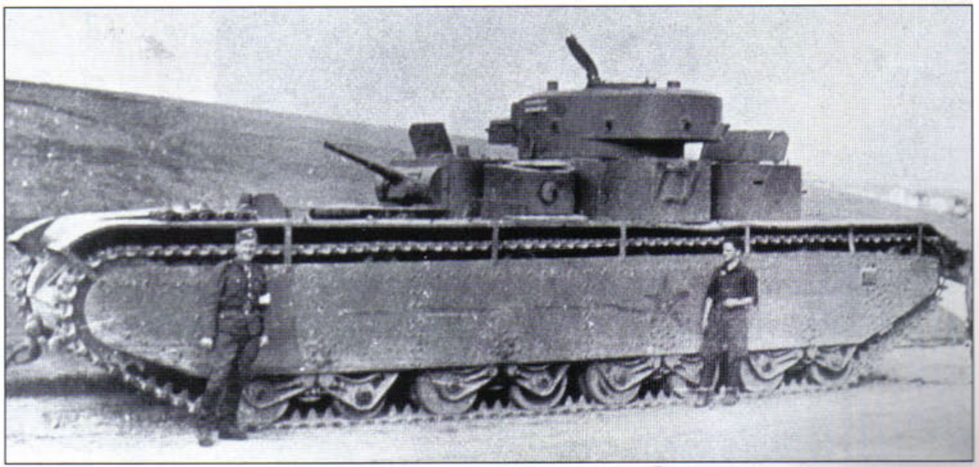
Only three IS-3 tanks were exported, this vehicle to Czechoslovakia and two others to Poland in the late 1940s for training purposes. Later exports of the IS-3M to China, Egypt and North Korea took place after the 1959 rebuilding program.



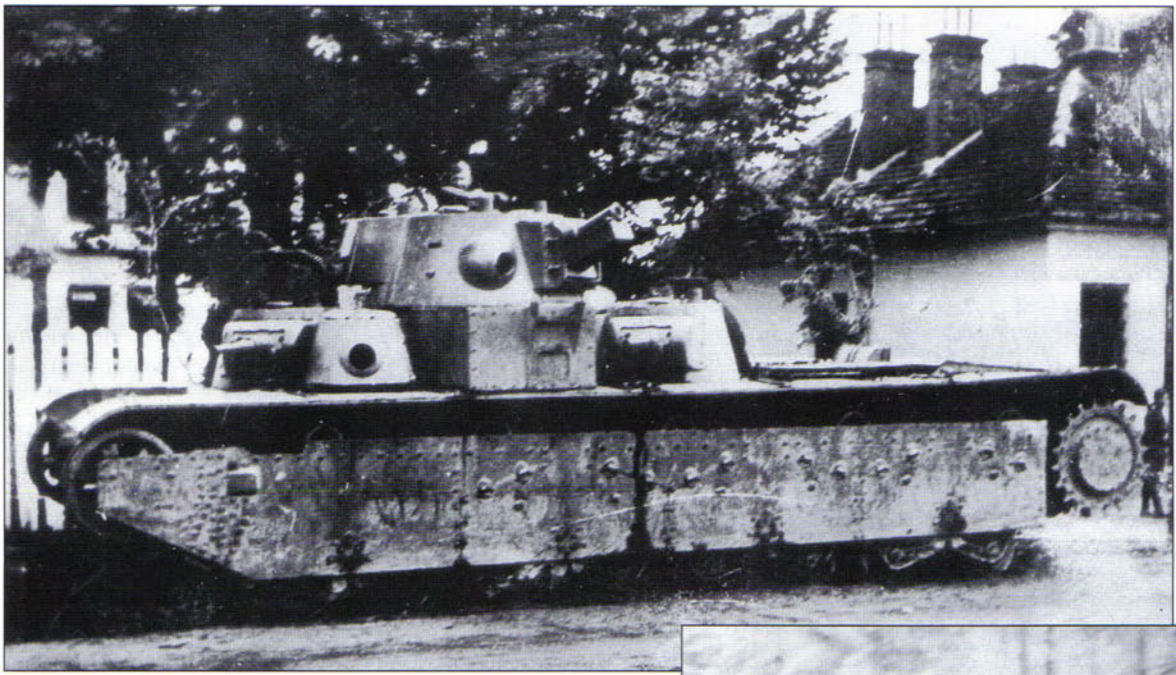
A total of 48 T-35 heavy tanks were operational with the Red Army at the beginning of the war on 22 June 1941 with the 67th and 68th Tank Regiments of the 34th Tank Division, 8th Mechanized Corps in Ukraine. Of these, only 5 were lost in combat, the remainder were abandoned due to mechanical breakdowns. This is the standard T-35 Model 1935 identifiable by its vertical turret sides. (James Crow)



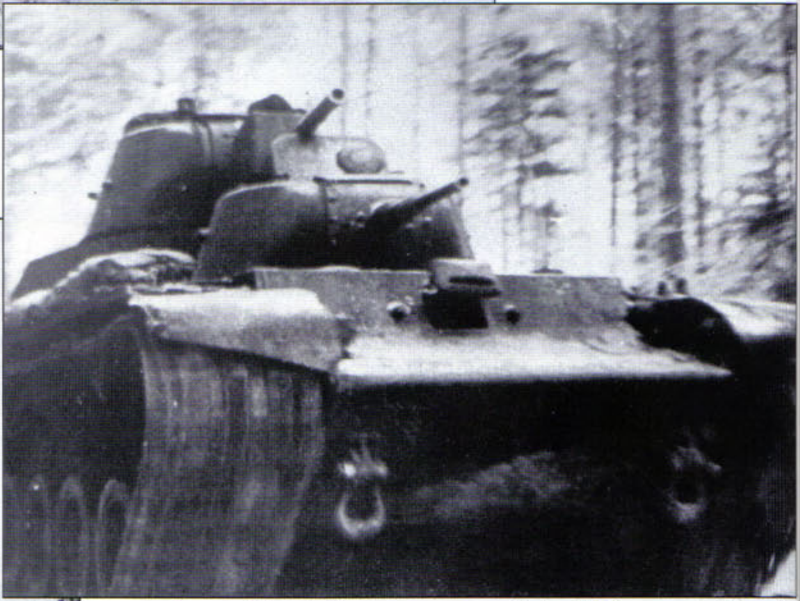
This T-35 Model 1938, probably of the 68th Tank Regiment was abandoned in the Lvov area of western Ukraine. It was apparently taken over by Ukrainian nationalist military units allied with the Germans. The slogan on the side of the hull is "Slava Stepanov Banderi!" (Glory to Stepan Bandera!) referring to the Ukrainian nationalist leader. Below this is the Ukrainian nationalist symbol, the trident of Volodymr. The white triangle markings and white bands on the hull side are probably also markings by this Ukrainian unit. (James Crow)



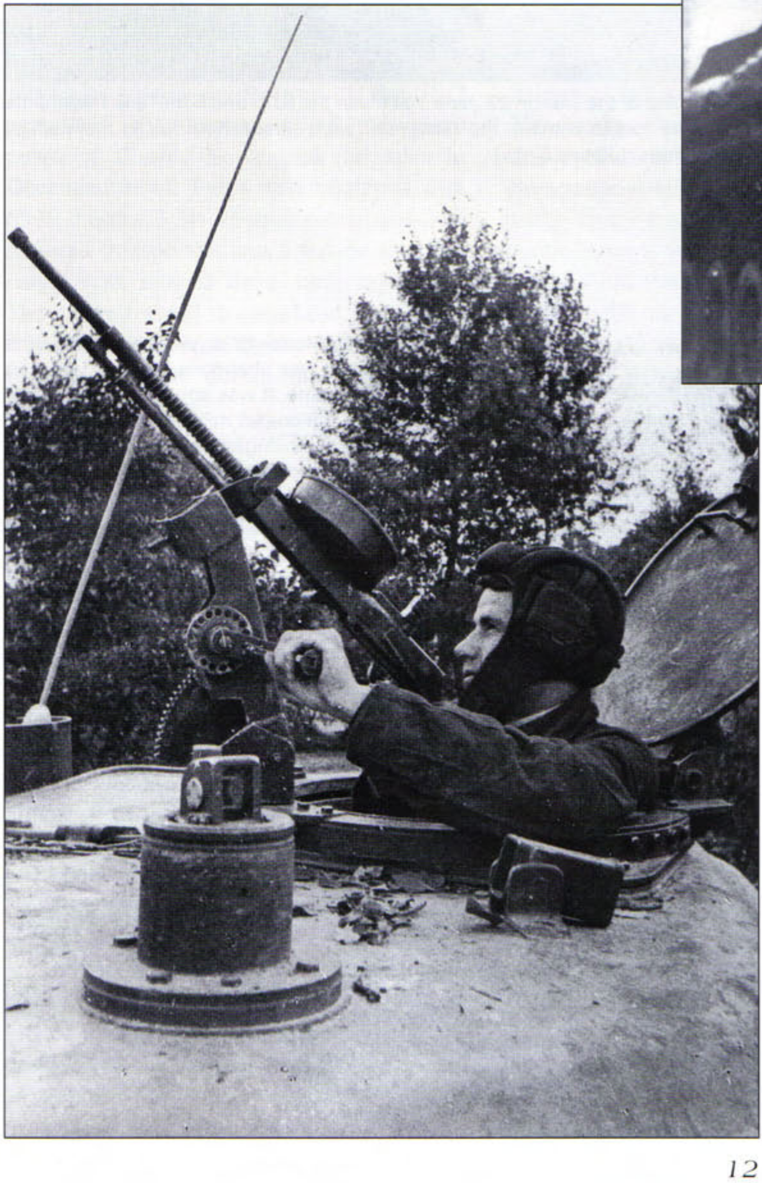
A T-35 Model 1935 captured by Slovak troops in Ukraine in June 1941. This vehicle has two horizontal white bars on the turret side, probably a marking for the 68th Tank Regiment. (Istvan Bajtos)



The T-35 Model 1938 was the final production model of the T-35 and was characterized by sloping armor on the turret sides. About 15 of these were built in 1938 and 1939, out of a total production of 61 T-35s. (US National Archives)

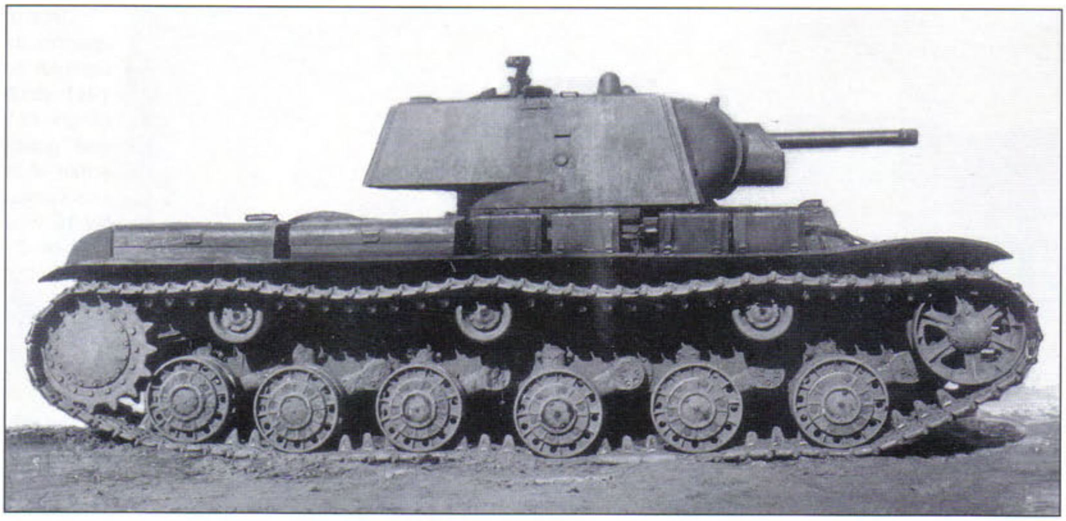


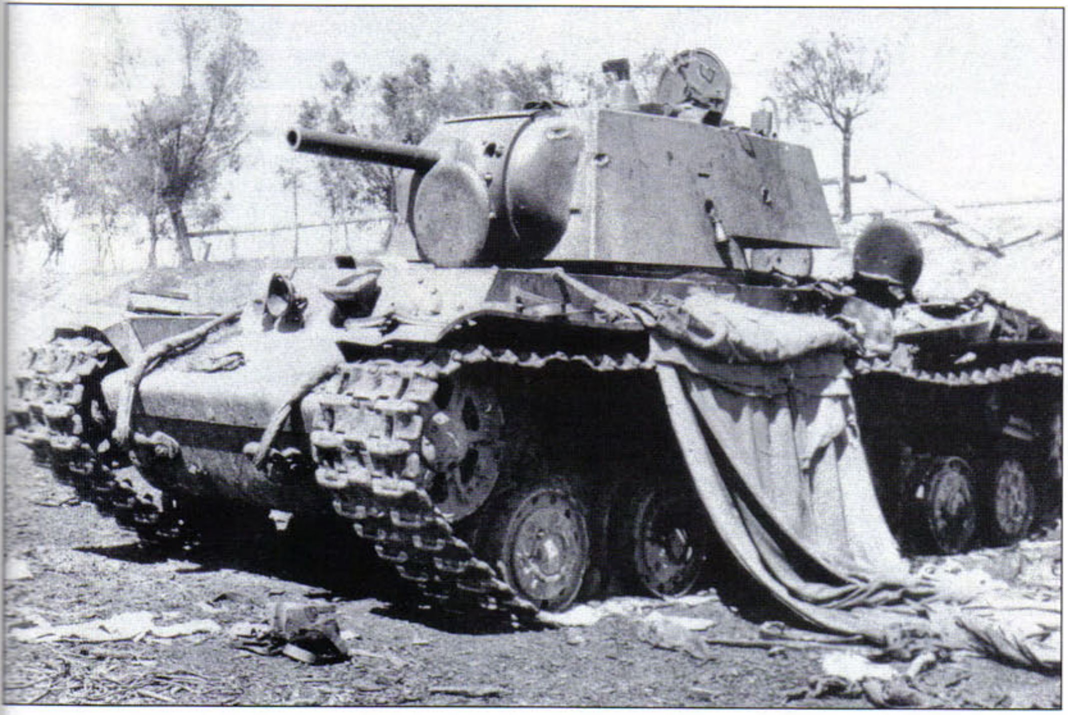
A competitive design for a successor to the T-35 was undertaken in the late 1930s, one of the contenders being the T-100 "Sotka" heavy tank developed by the Barykov design bureau at the Bolshevik plant in Leningrad. The prototype, along with the prototype of the competitive SMK heavy tank design were dispatched for operational trials to Finland in late 1939 with the 20th Armored Brigade. Neither multi-turreted design proved successful, so the Red Army opted for the single turret KV design instead.



A close-up of the turret of a T-35 or T-28 showing the P-40 anti-aircraft machine gun mounting for the DT 7.62mm anti-aircraft machine gun. This same mounting was also used on the early KV-1 production series.

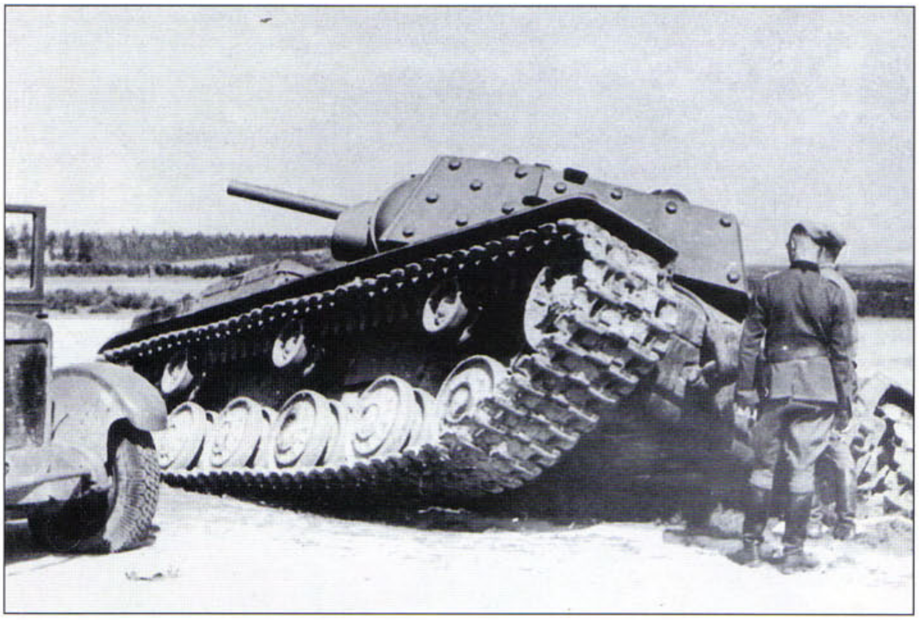
The most common early production version of the KV-1 was the KV-1 Model 1940 with the F-32 gun. In this gun, the barrel is higher in the mantlet since the recuperator is below the barrel. The early production batches as seen here carried additional fuel in four rectangular fuel containers on the fender.



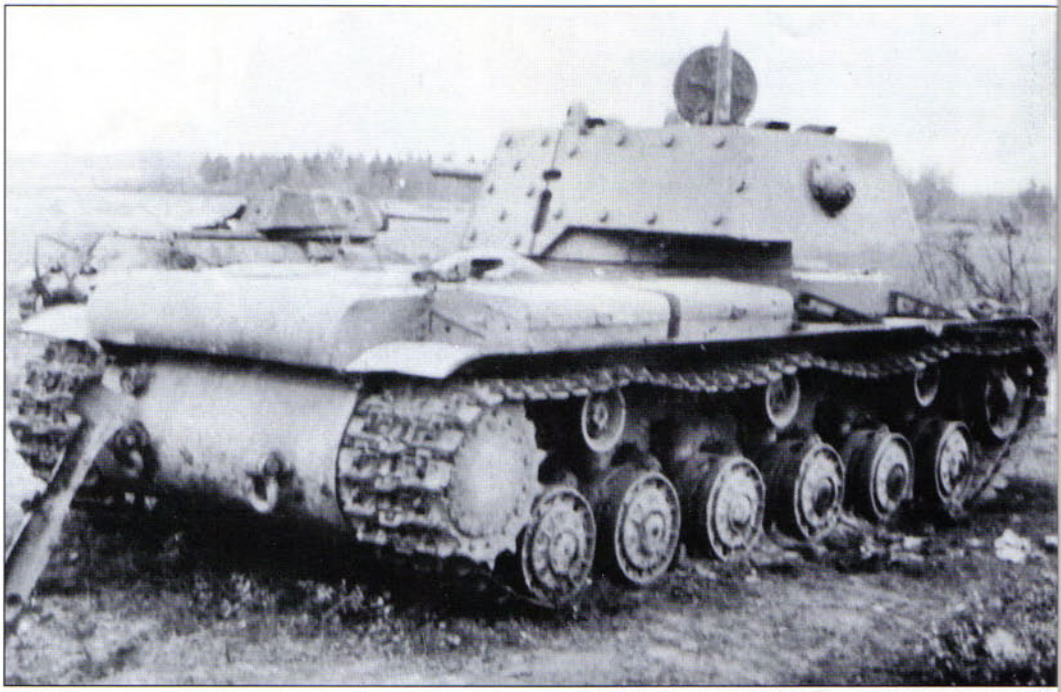


There were a total of 508 KV tanks in Red Army service in June 1941, mostly in Ukraine. This KV-1 Model 1940 of the 6th Mechanized Corps was knocked out at Zelva, 33 km west of Slonim in Byelorussia in July 1941. This particular unit had more KVs than any other Soviet formation at the opening of the war. This tank has taken repeated hits by German 37mm and 50mm guns, and appears to have been finally knocked out by an 88mm gun hit on the rear side of the turret. (US National Archives)

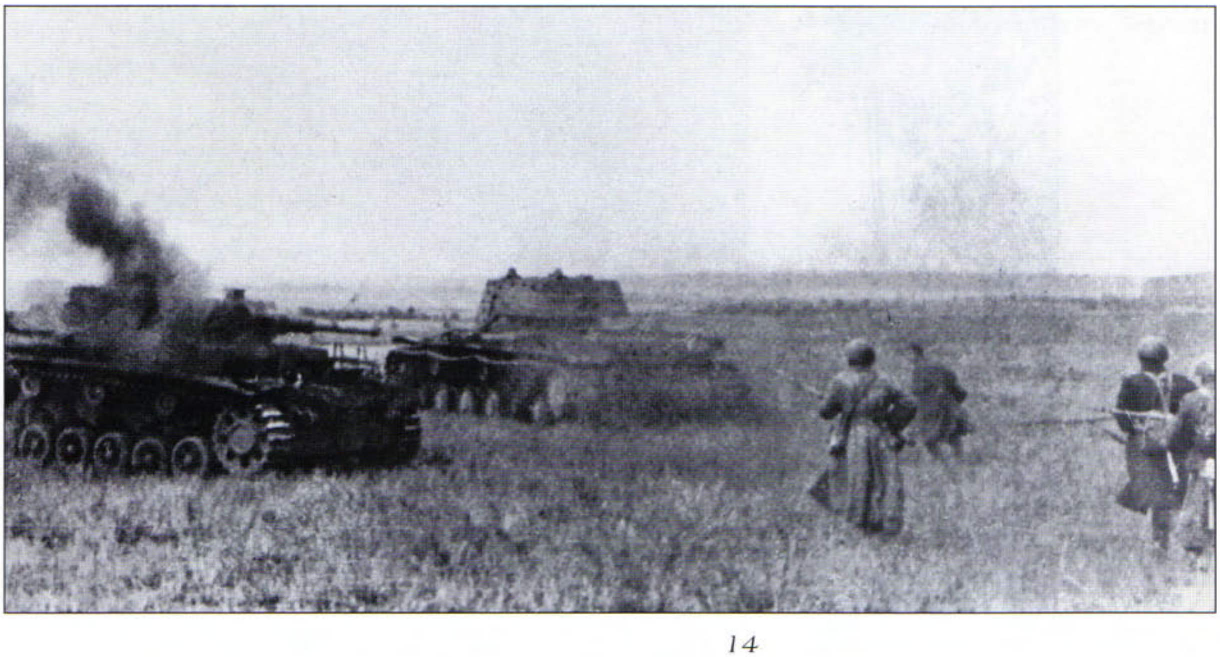
A KV-1 Model 1940 abandoned by the road side in Ukraine in July 1941 and taken over by the Slovak Army. The majority of KV tanks lost in June-July 1941 were due to lack of fuel and mechanical breakdowns. At the time, the Wehrmacht had few weapons that could penetrate its thick armor. This often led to "tank panic" amongst the German infantry when confronted by KV tanks. (Ivan Bajtos)



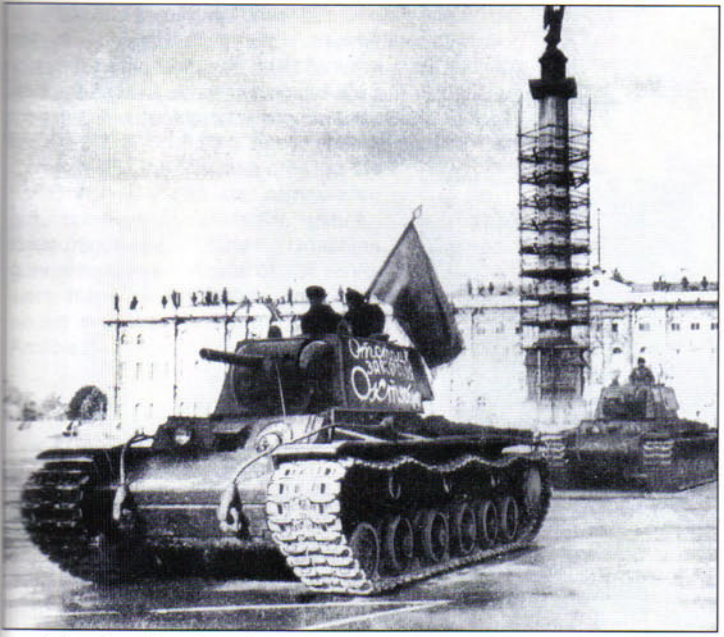
In the spring of 1941, a crash program began to uparmor the KV-1 based on mistaken intelligence about German anti-tank guns. This led to the KV-1E Model 1941 which had additional plates of armor bolted to the outside of the turret. As it soon transpired, German anti-tank guns were incapable of penetrating the normal armor of the KV at normal combat ranges and the KV was vulnerable only to the 88mm anti-aircraft gun. This KV-1E was abandoned near Yartsevo in the Smolensk area on 27 July 1941 and was probably from the 7th Mechanized Corps.



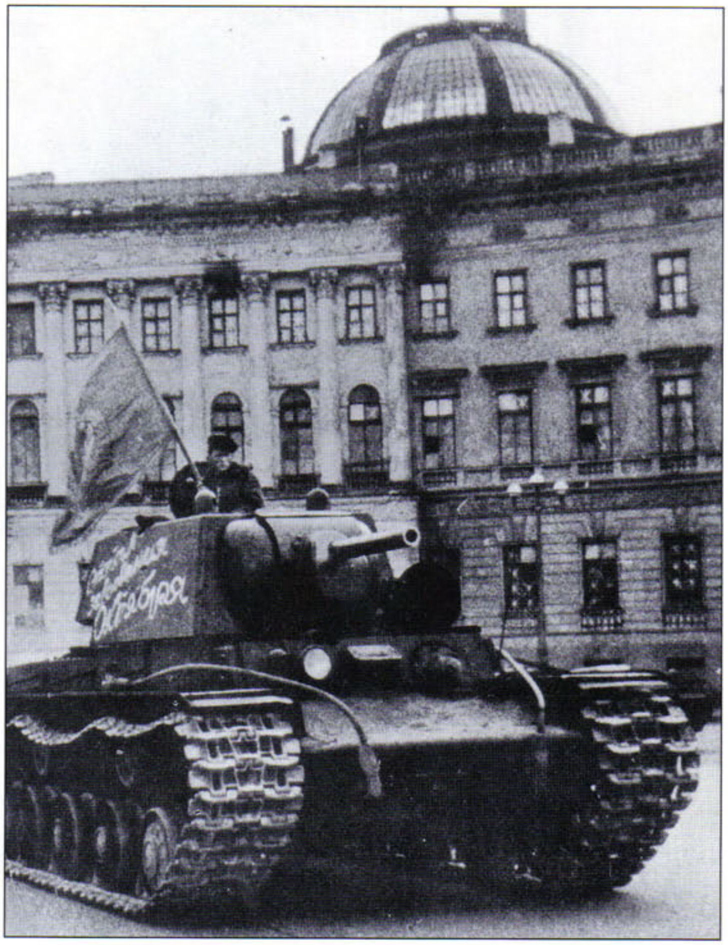
The KV-1E appliqué armor was spaced off from the turret side, in part to help break up penetrating anti-tank shot. This KV-1E was still in service later in the autumn of 1941 before being knocked out. (James Kitchens III)



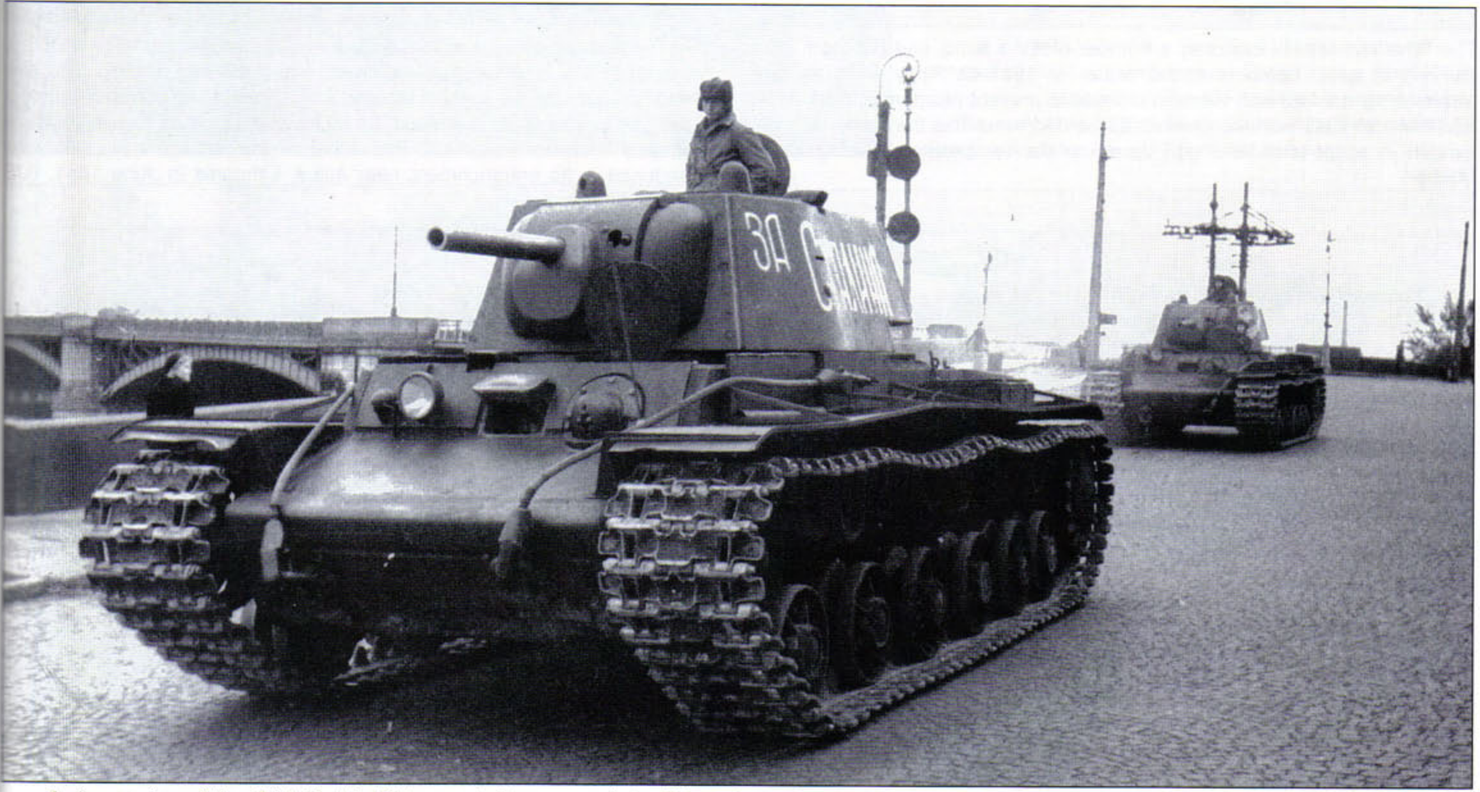
A rare shot of a KV-1E going into action with infantry support past a burning German PzKpfw III in the summer of 1941. Given the chaos at the front in the summer of 1941, few photos survive of Soviet tanks in actions, most photographs having been taken by the Germans of destroyed or captured tanks.



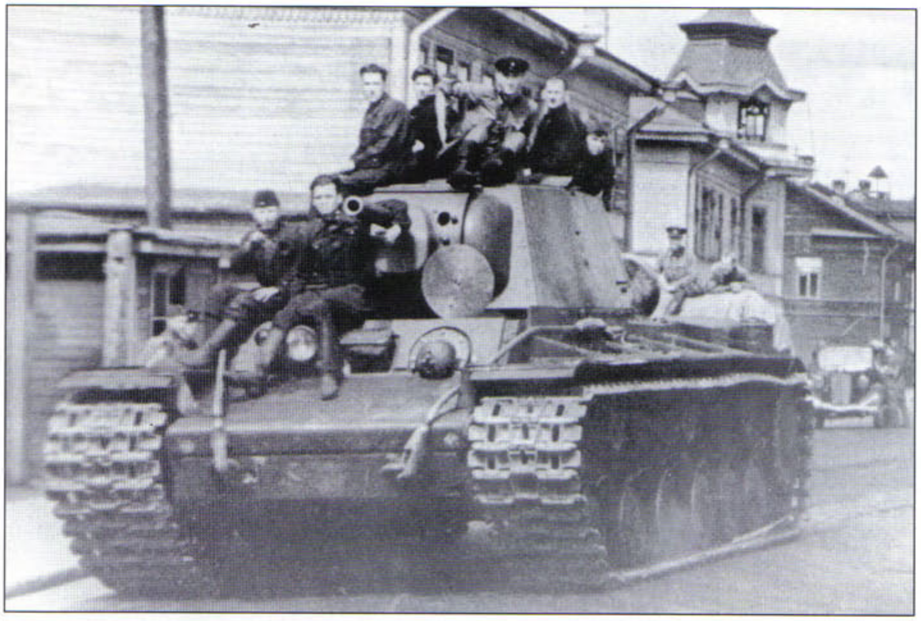
The city of Leningrad was the home of the KV, having been designed and built at the Leningrad Kirov Plant (LKZ). So during the late summer and fall of 1941, the KVs were seen in action more often in this sector of the front, having been driven straight from the factory. These tanks are seen parading through Palace Square with the Alexander column in the background, celebrating the defeat of Napolean and enshrouded in scaffolding to protect it from air attack. The lead tank carries the slogan "We defend the conquests of October" referring to the October Revolution that put the Bolsheviks in power in 1917 which took place from Palace Square. This tank is a KV-1 Model 1941 with the new uparmored welded turret. The tank behind it, with the slogan "For Stalin" is seen in more detail in the lower photo here.



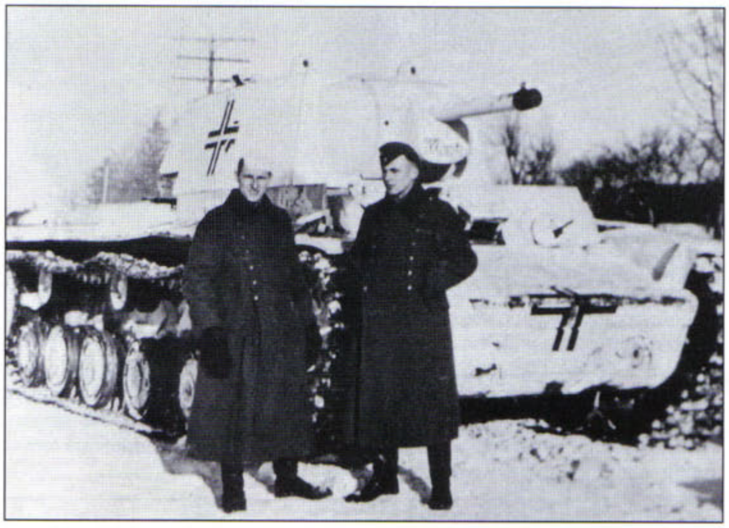
A view of the opposite side of the KV-1 Model 1941 with the uparmored welded turret passing the Winter Palace in the background. The turret slogan is the same as in the other view of this tank. The principal feature of this turret will be noted by careful inspection of the area in front of the turret overhang immediately left of the first letter of the third line of the slogan. Notice also that this vehicles are beginning to sport a layer of appliqué armor on the hull front and hull sides.



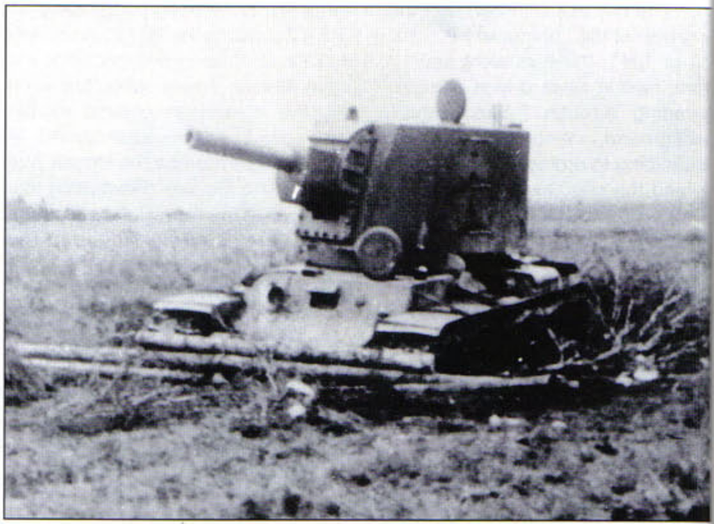
A clearer view of the KV-1 Model 1941 seen in the upper photo. This tank carries the slogan "Za Stalina!" (For Stalin!) on its turret side. This also has the new uparmored turret, as well as appliqué armor on the bow, superstructure front and on the hull sides.



A KV-1 Model 1941 with uparmored welded turr going into combat in the suburbs of Leningrad in the lat summer or early fall of 1941. The F-32 continued to b mounted in the KV-1 tank for some time after mor effective ZIS-5 76.2mm gun was already being fitted i the T-34 medium tank.

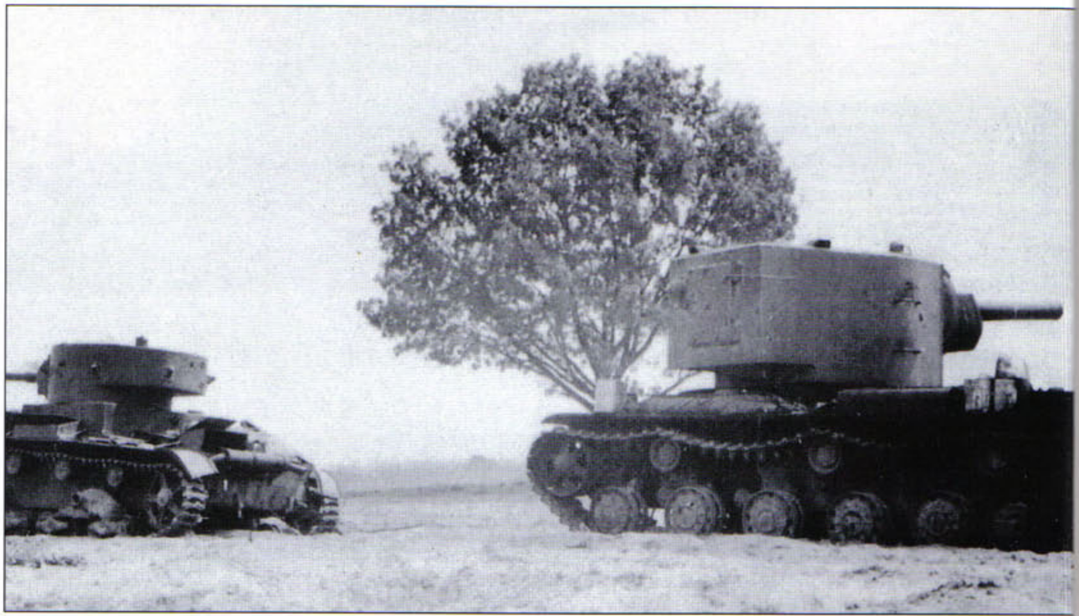


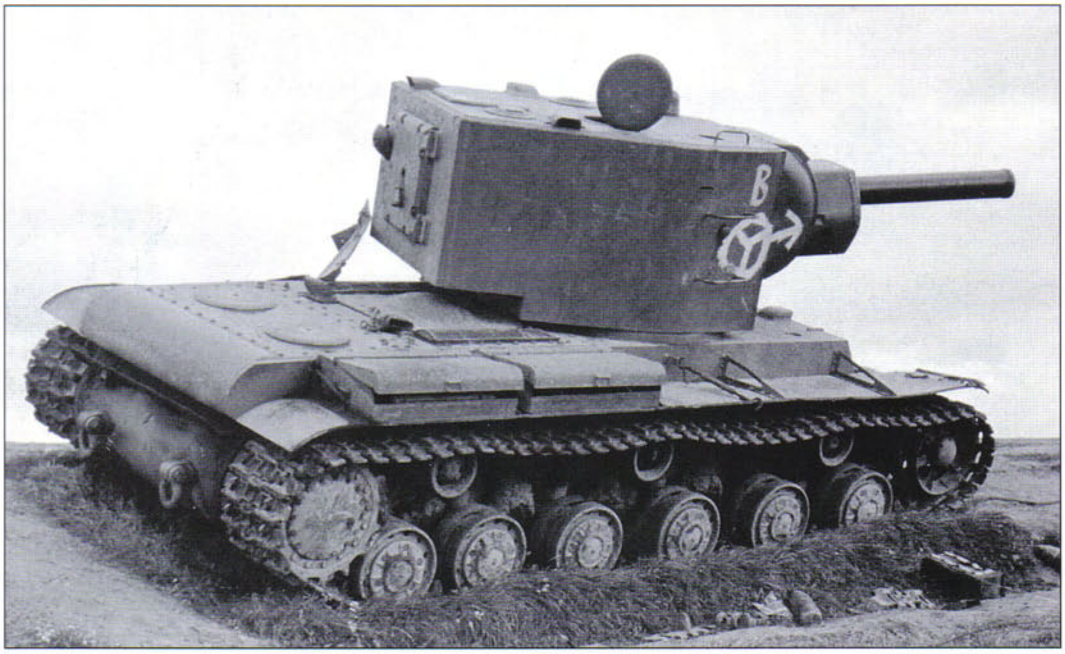
The Wehrmacht captured a number of KV-1 tanks and put them into service in small numbers in the winter of 1941-42. They were always prominently marked with German crosses to prevent misidentification. This KV-1 Model 1941 with the uparmored welded turret has the name "Marta" written in script under the gun barrel on the recuperator housing. (Lee Archer)



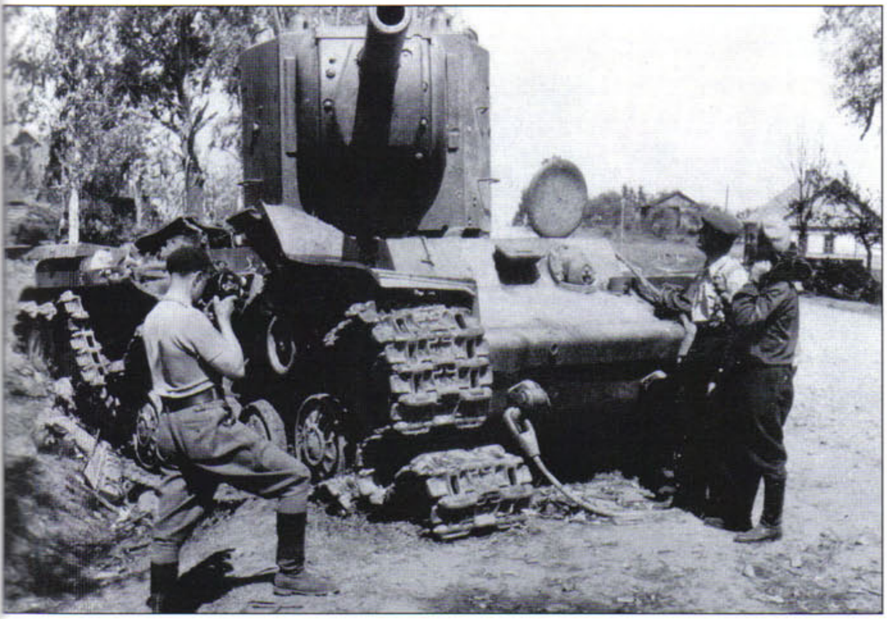
The companion vehicle to the KV-1 was the KV-2, originally called th "large turret KV". This version was armed with a 152mm howitzer and wa intended to provide fire support when attacking reinforced concrete bunker of the type encountered in Finland. So far as is known, only four of this earl production version were built. This tank of the 5th Tank Division wa abandoned in its entrenchment near Alitus, Lithuania in June 1941. (U National Archives)

The standard production version KV-2 Model 1940 had a new turret design. Shortly after series production began in 1940, the turret was redesigned with a single curved side turret plate and improved fire controls. The later production types also had a hull machine gun position added. This view of an abandoned KV-2 Model 1940 and a T-26 Model 1933 shows the enormous size of this tank. The KV-2 was popularly nicknamed "Dreadnought" in Russian service. The KV-2 was intended as a heavy breakthrough tank, to help penetrate enemy defenses reinforced with bunkers. The modified M-10 Model 1938/40 howitzer could fire a special 40 kg concrete penetrating round for attacking pillboxes. The new turret had curved side panels. (US National Archives)

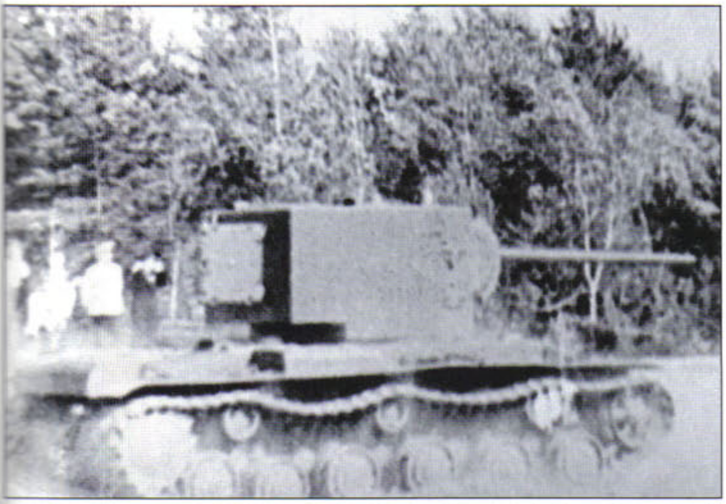




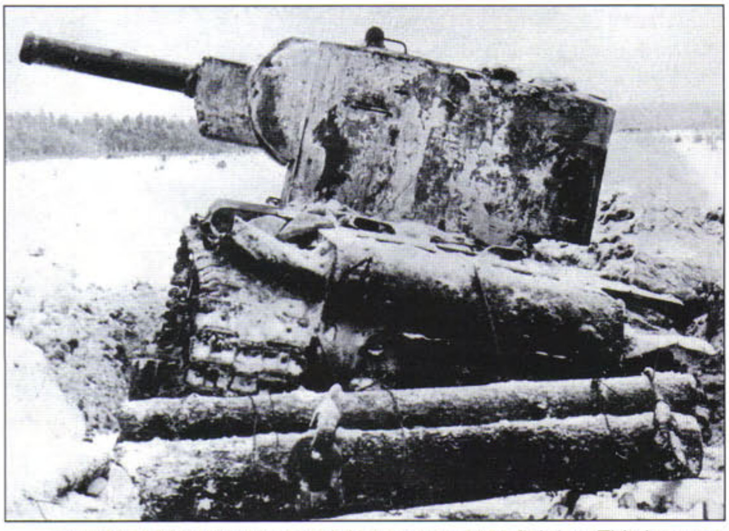
A KV-2 Model 1940 lies abandoned by the roadside in June 1941. Passing German troops of the 12.Panzer Division have painted their insignia on the side as a road marker for the location of their encampment. Compared to the five man crew on the KV-1, the KV-2 had six: commander, gun commander, assistant, gunner, driver/mechanic and machine gunner/radioman. A total of 334 KV-2s were manufactured before production ended in October 1941. (US National Archives)



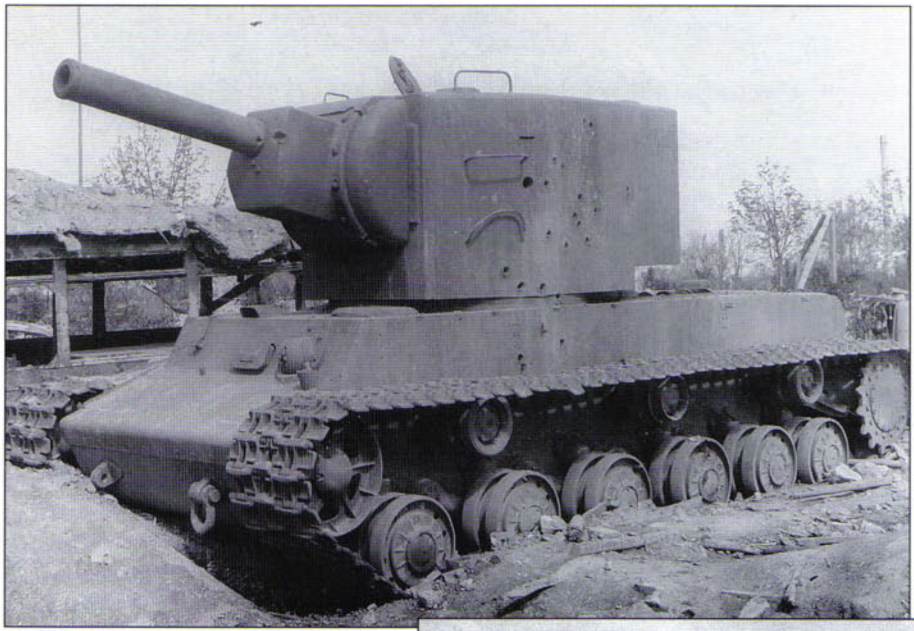
A single KV-2 of the 2nd Tank Division held off tank attacks by the German 6.Panzer Division near Rasyeinyia, Lithuania in June 1941. The KV-2 played a prominent part in the early tank battles in the Baltic republics during the first week of the war. (US National Archives)



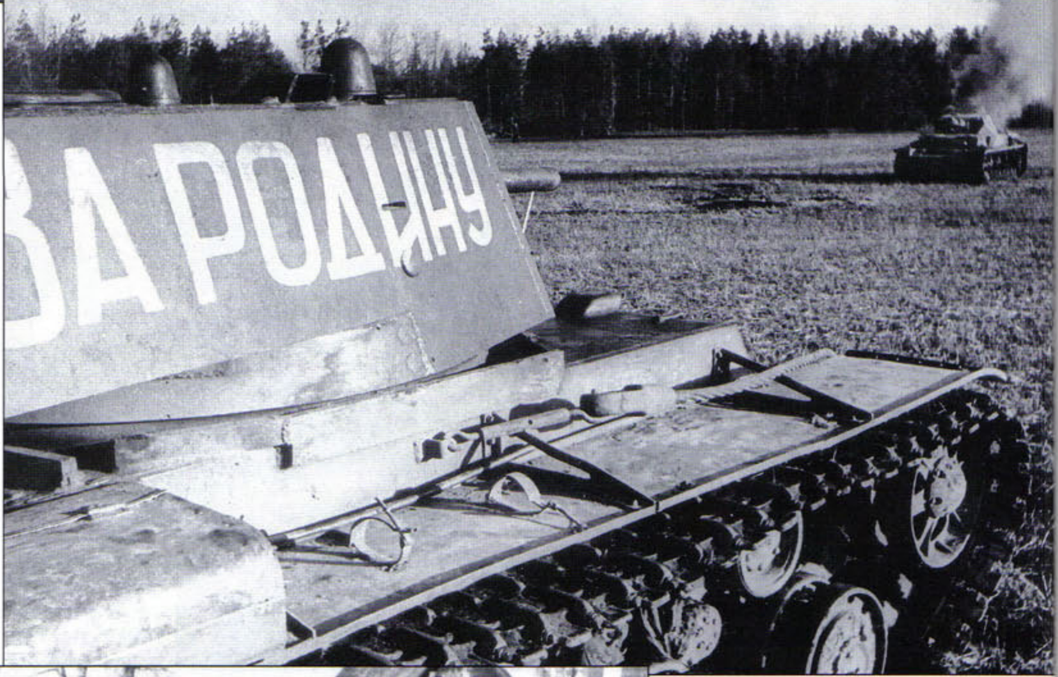
Due to exaggerated reports about new German tank guns and tank armor, the KV-2 was experimentally fitted with the F-39 107mm tank gun which was demonstrated to Stalin and senior military leaders near Moscow. This was intended to arm a new version of the KV, tentatively called the KV-3. But the disruption of the Leningrad factory by the German invasion put an end to these plans.



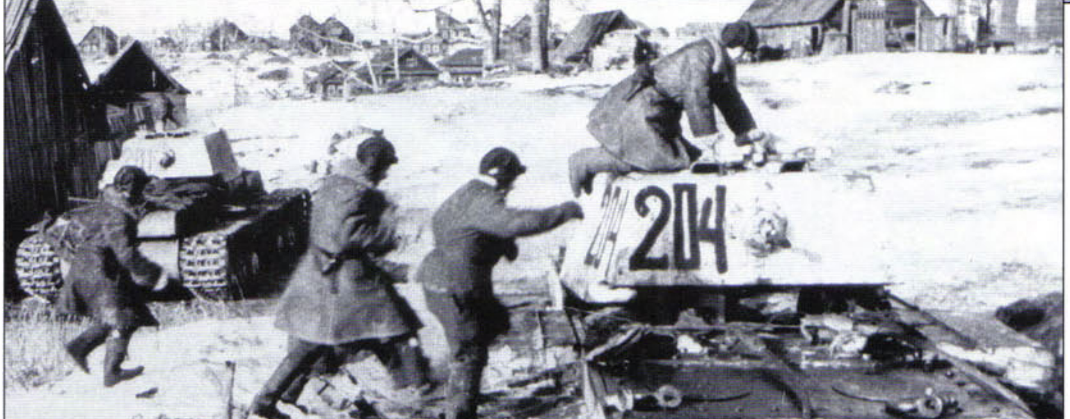
Very few KV-2 tanks survived the summer 1941 fighting. This is a rare example of a KV-2 Model 1940 that was still operational during the fighting in the winter of 1941-42, with white winter camouflage. It has become bogged down and the crew has attempted to extract by pulling unditching beams underneath it, without success.



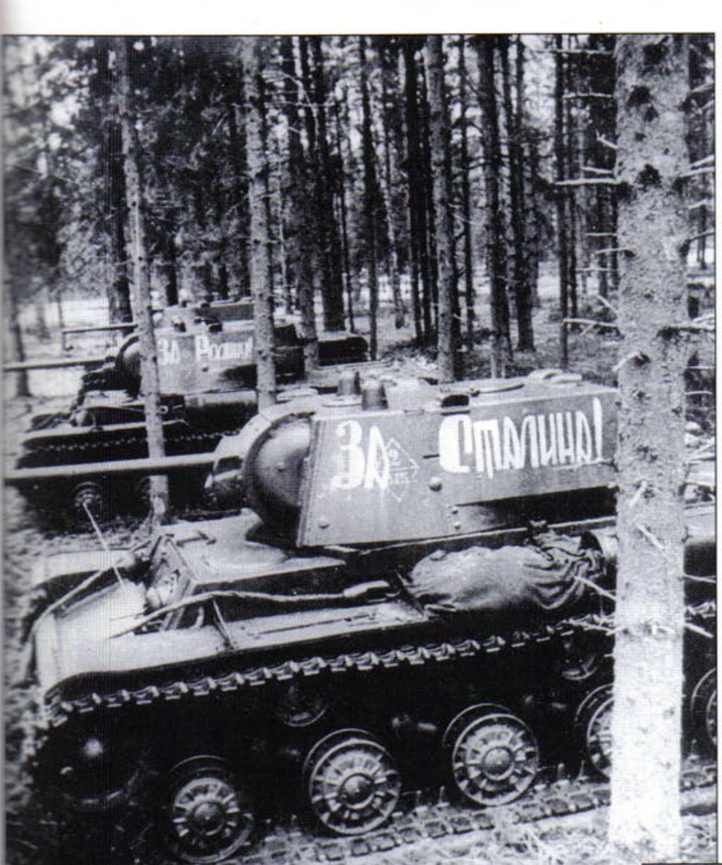
The last combat action of the KV-2 was in German hands when this captured vehicle was used by German troops in April 1945 to set up defenses near the Krupp plant. It has suffered repeated hits on the turret side possibly by 75mm tank gun fire. (US Army)



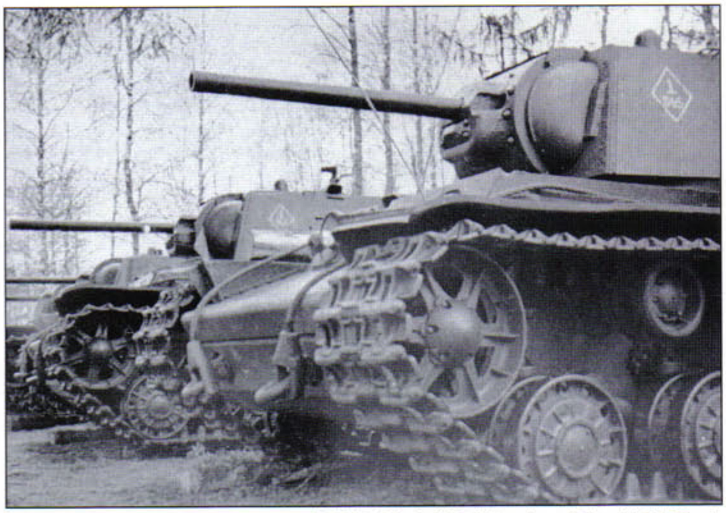
A KV-1 Model 1941 in action on the South-western Front in the spring of 1942. In the background is a burning PzKpfw IV, but judging from the camera angle, this is probably a staged propaganda photo. The patriotic slogan on the turret side is "Za Rodinu" (For the Homeland). This tank is unusual in that it is fitted with the older type of welded turret, but has some newer features including the armored splash ring at the base of the turret and the longer ZIS-5 gun. Not all KV-1 production was sequential, with vehicles being assembled from whatever subcomponents were available at the time. (Kolli)



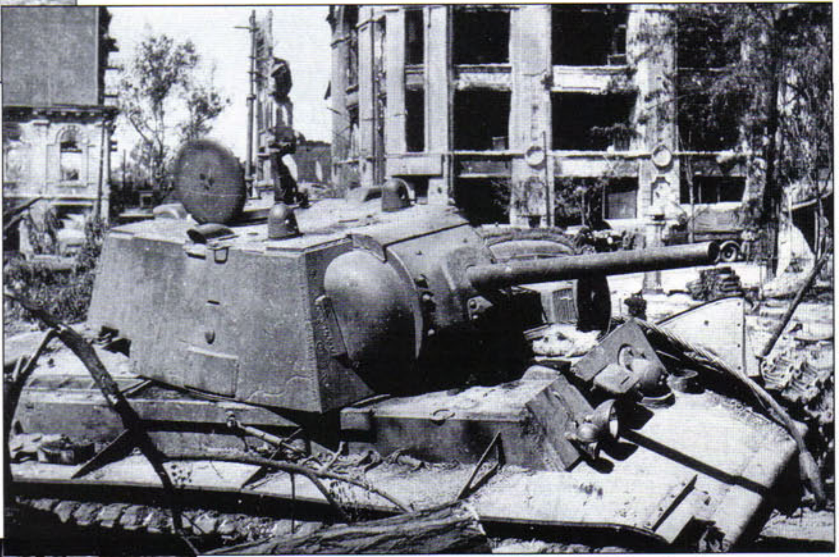
A pair of KV-1 Model 1941 tanks in a village outside Moscow during the winter of 1941-42. As Soviet tank tactics became more sophisticated, there was a greater use of tactical insignia on the turrets to assist in coordinating tank operations via radio.



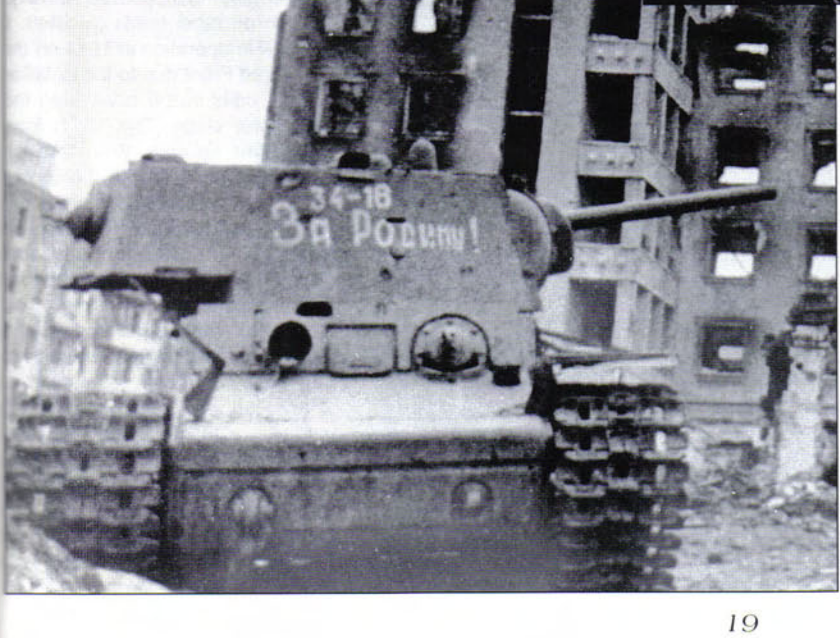
A platoon of tanks from the 116th Tank Brigade in May 1942 on the Western Front. This unit is particularly well known as it was photographed heavily during its training period in the spring of 1942. The vehicle nearest the camera is a KV-1 Model 1941 and carries the slogan "Za Stalina!" (For Stalin). The 2 in the tactical marking probably indicates the 324th Tank Battalion. The KV-1 Model 1941 with cast turret carries the slogan "Za Rodinu!" (For the Homeland). The nearer KV is a mixture of early and late features, mounting the newer ZIS-5 76.2mm gun and hull appliqué armor, but still using the older pattern welded turret, and early pattern roadwheels.



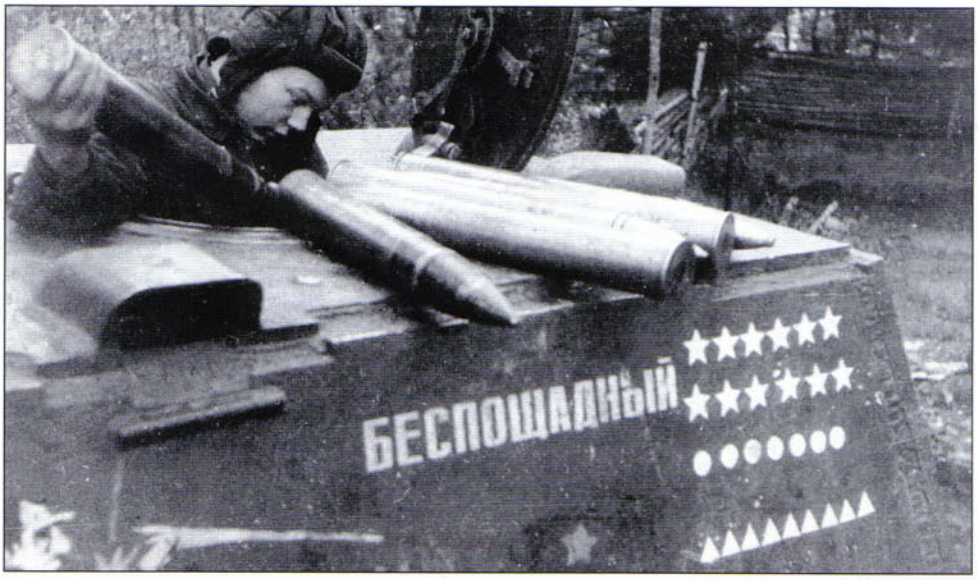
A view of another platoon of KV-1 Model 1941 tanks of the 116th Tank Brigade in May 1942. This unit was committed to action in the summer of 1942 as a separate tank brigade and used to support various units on the Voronezh Front. The 1 in the tactical marking probably indicates the 323rd Tank Battalion.



A clear view of a KV-1 Model 1941 with the uparmored welded turret. As will be noted, the turret side plate continues straight back instead of curving under the turret overhang. This vehicle is fitted with the new ZIS-5 76.2mm gun and has standard hull and turret appliqué armor. The rectangular armor patch under the side pistol port was probably to repair battle damage.

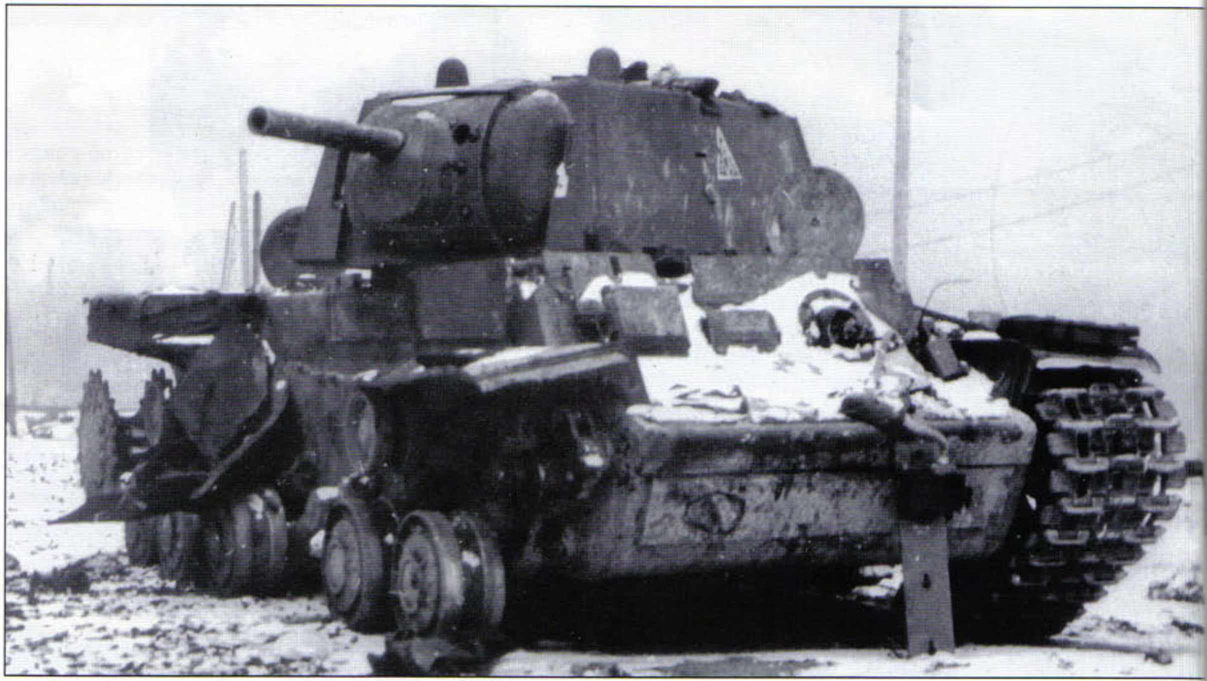


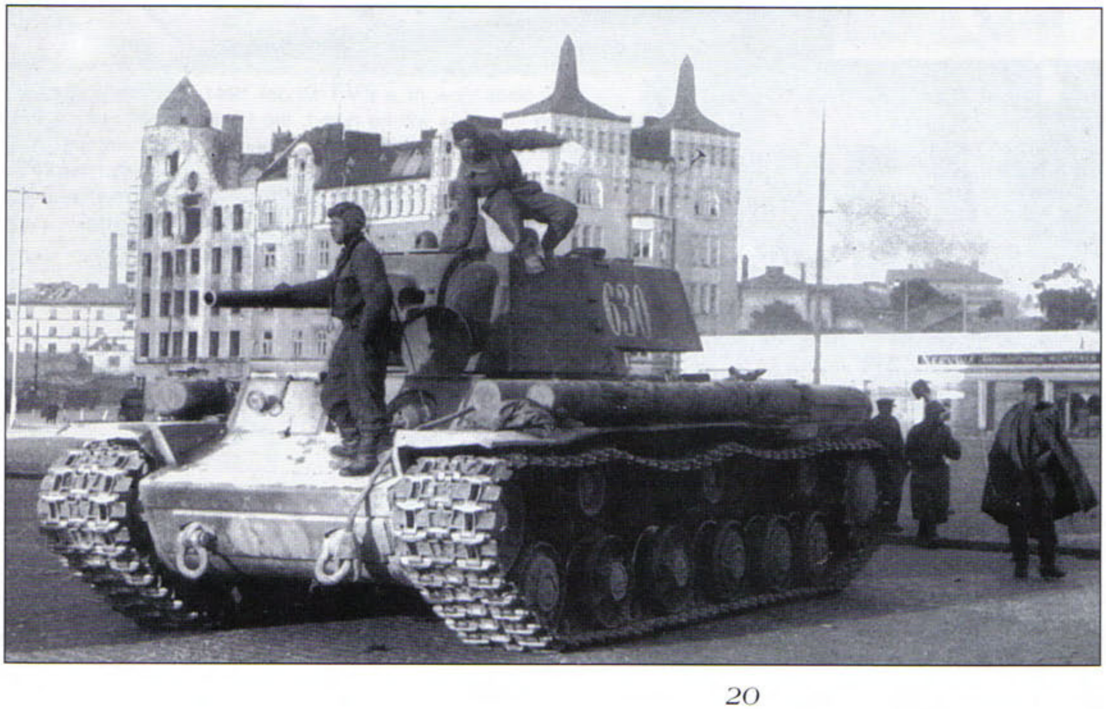
A KV-1 Model 1941 with the uparmored welded turret in the ruins of Stalingrad. The turret slogan is the popular "Za Rodinu!".



One of the best known KV-1 Model 194 tanks in the Russian wartime press wa Besposhadniy (Merciless), of the 12th Tan Regiment, Western Front 1942. Commanded b tank ace Lt. Pavel Khoroshilov, it was credite with 12 German tanks as shown by the smal white stars, as well as various armored vehicle and artillery pieces as indicated by the othe symbols. This particular tank was donated to th regiment by contributions of Moscow artists an was decorated with a cartoon of Hitler bein blasted by a tank, seen in the lower left corner o the photo.

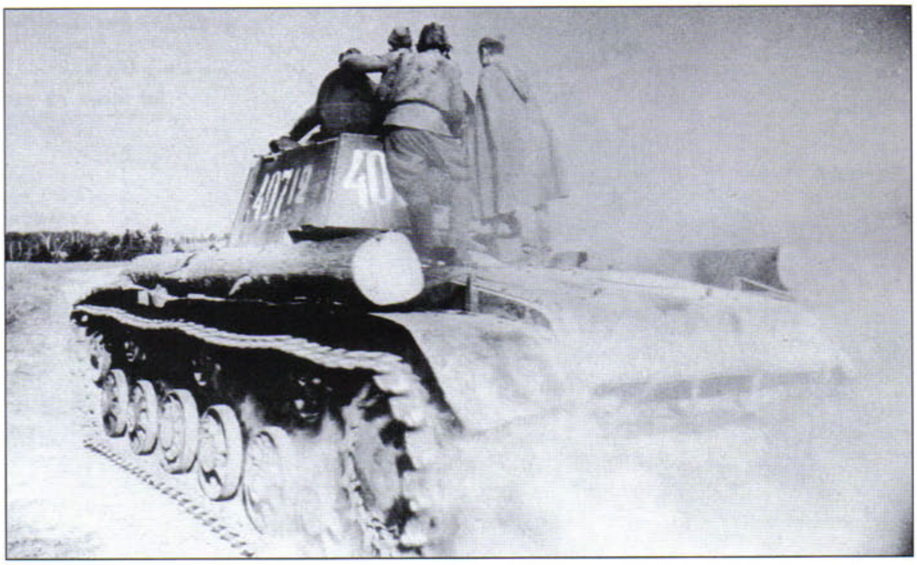
A KV-1 Model 1941 with the uparmored turret and F-32 gun knocked out during the winter 1942 fighting. This tank has several unusual details including added appliqué armor on the turret front.

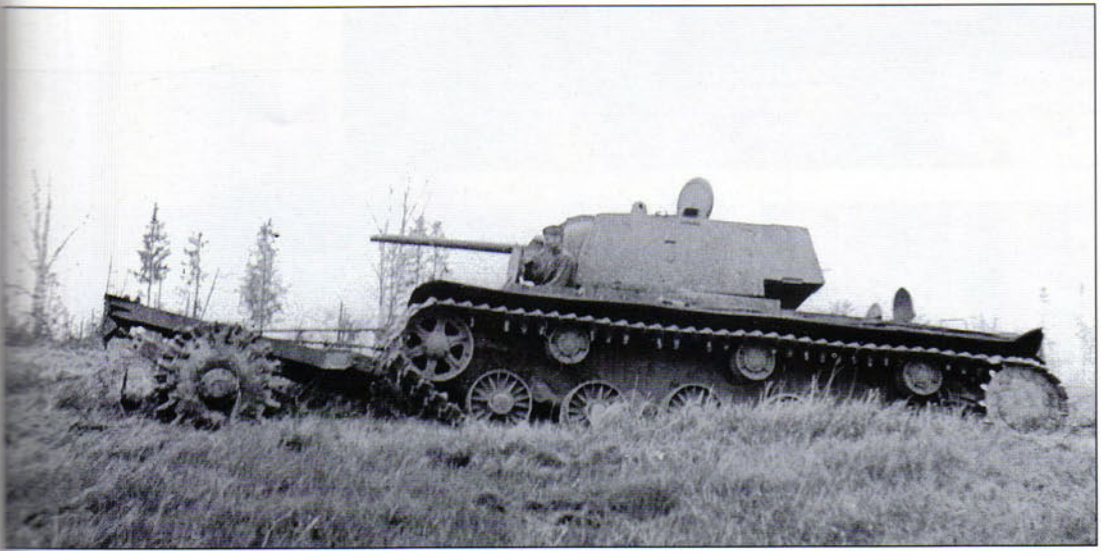




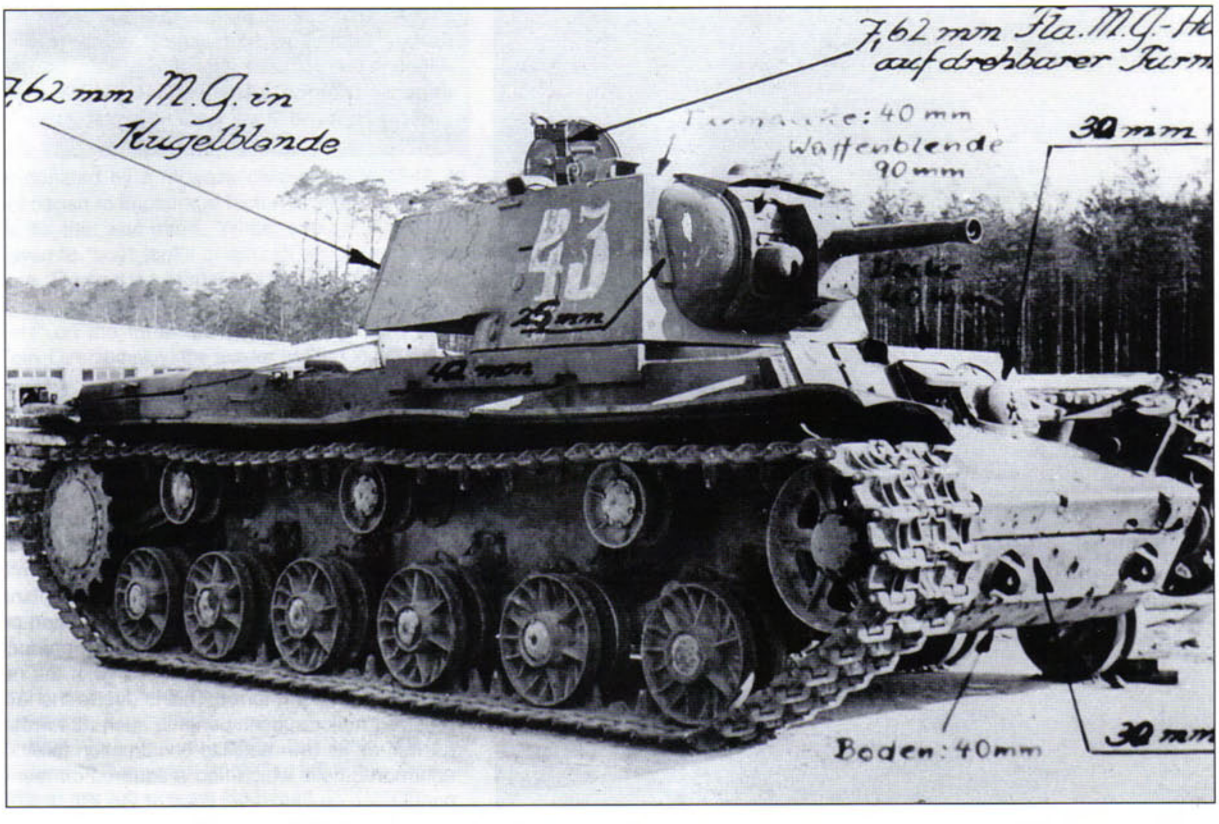
Although the KV-1 Model 194 had largely disappeared throug attrition on most fronts by 1943, i was still in operation in 1944 on th Leningrad Front due to the isolatio of tank units in the city during th three year siege. This KV-1, fro the 260th Guards Breakthroug Tank Regiment of the Leningra Front, took part in the capture of th Finnish city of Viipuri (Vyborg) i June 1944. The tank tactica number 630 has been painted ou on the lower bow plate. Th suspension has a mixture of th early and later style roadwheels indicative of past repairs. Th attack on the city of Vybor involved three heavy tan regiments, the 27th Guards Heav with IS-2 tanks, the 31st Guard Breakthrough with KV-85 and th 260th Guards Breakthrough Tan Regiment, with a mixture of KV- and KV-1S tanks. (Mazelev)

Some KV tanks ended up with unofficial configurations during the rebuilding of battlefield wrecks. This KV-1 consists of the hull of a later KV-1S Model 1942 with the uparmored welded turret of the KV-1 Model 1941. It is operating with a heavy tank regiment of the 2nd Baltic Front in operations in Latvia in the summer of 1944.

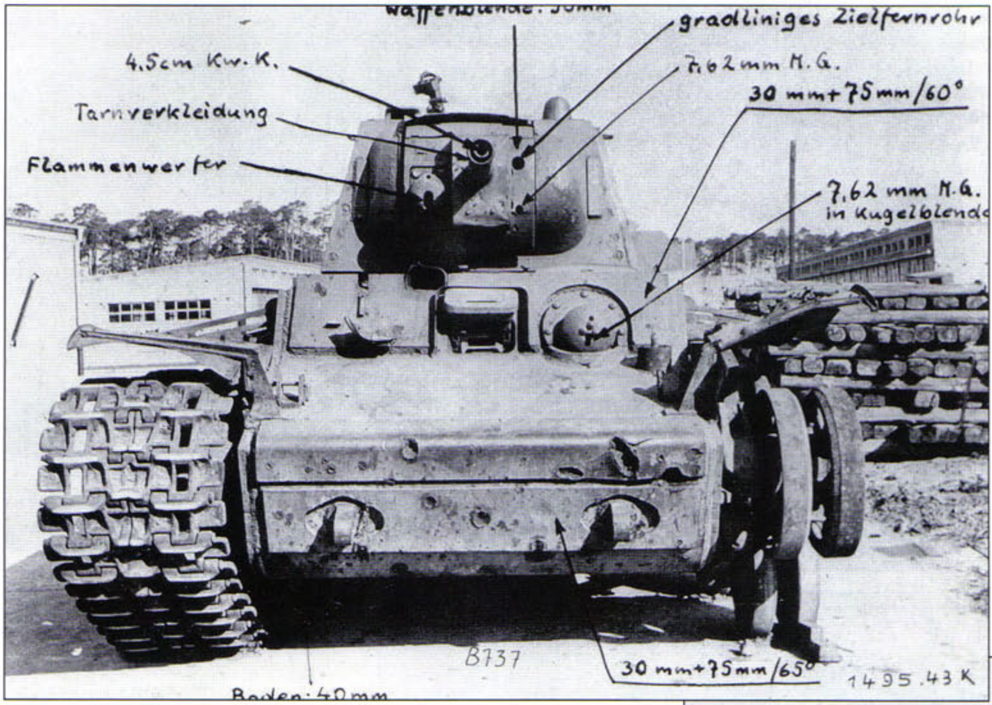




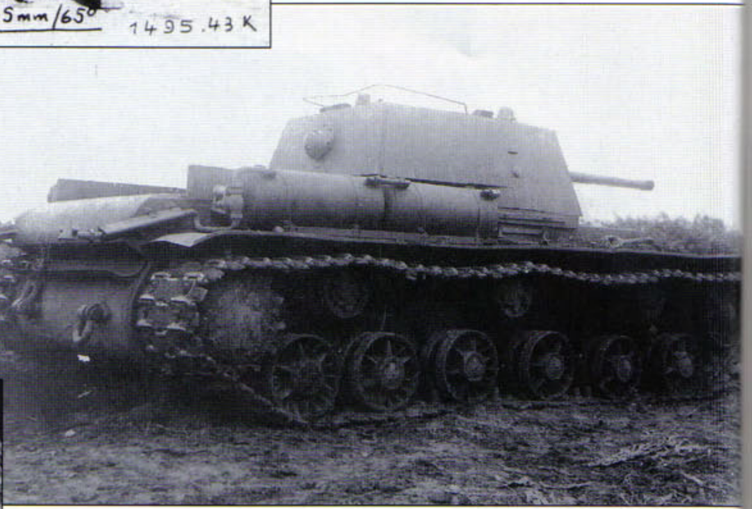
In preparation for the assault on the Karelian isthmus of Finland in the summer of 1944, Soviet tank units of the Leningrad Front mounted PT-34 mine rollers, normally intended for the T-34 tank, to the KV instead. This is the KV-1 tank of Junior Guards Lieutenant Lomovitskiy during the Karelian isthmus campaign. (Suchatov)


7,62 mm Fla.M.G.-H
auf drehbarer Turm
7,62 mm M.G. in Kugelblende
Turmdecke: 40 mm
Waffenblende 90 mm
30 mm
43
25 mm
40 mm
Boden: 40mm
30 mm

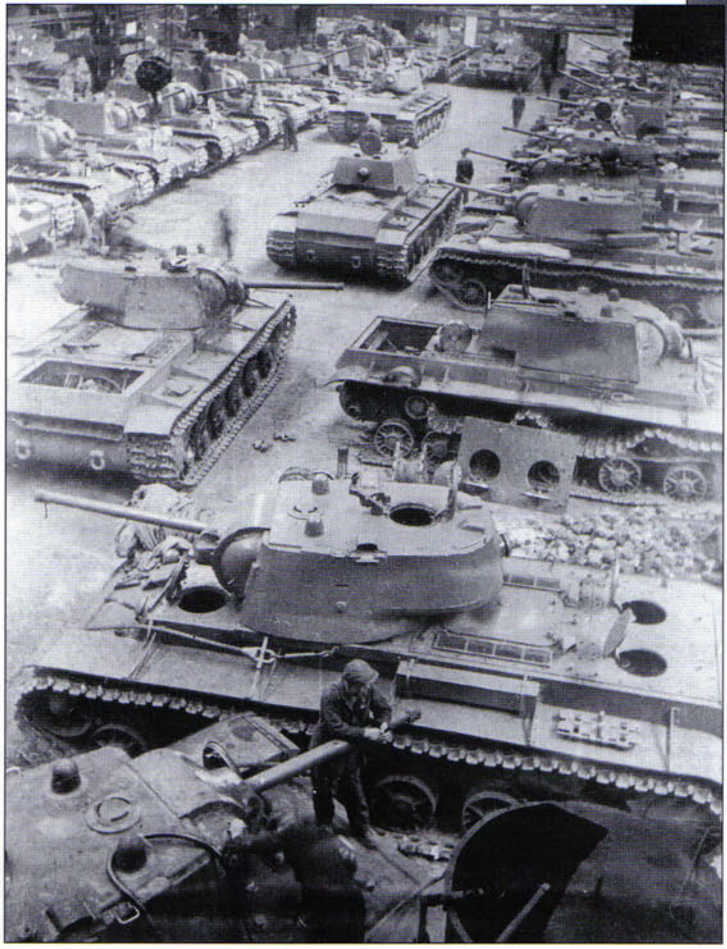
A small number of KV-1 tanks were converted into KV-8 flamethrower tanks. The main gun was removed, and an ATO-41 flamethrower and co-axial 45mm tank gun were fitted. The 45mm gun had a false sheet metal barrel fashioned around it so that the flamethrower tanks could not be easily distinguished by German troops.


Waffenblende
gradliniges Zielfernrohr
4.5cm Kw.K.
7.62mm M.G.
30 mm+75mm/60°
Tarnverkleidung
Flammenwerfer
7.62 mm M.G.
in Kugelblende
B737
30 mm+75mm/65°
1495.43 K
Boden: 40mm

This German intelligence photo shows captured KV-8 flamethrower tank. This fronta view clearly shows the 45mm gun within a thi sheet metal barrel. The flamethrower housin can be seen low to the left of this.

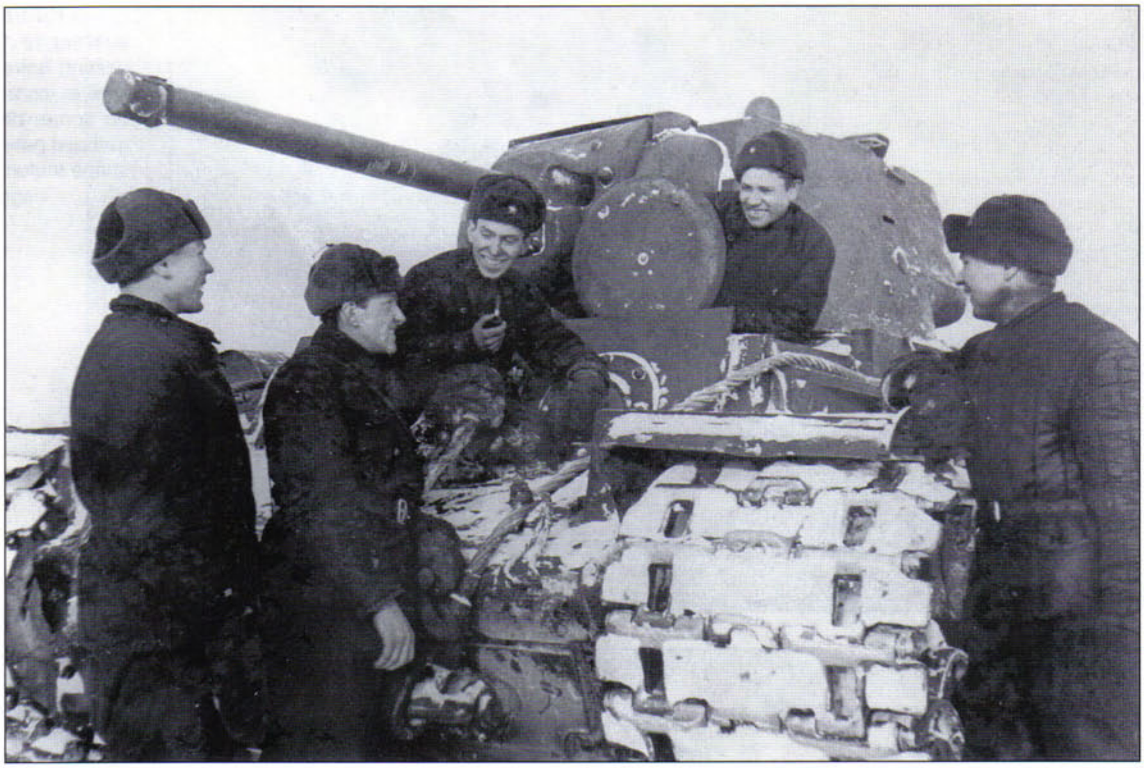


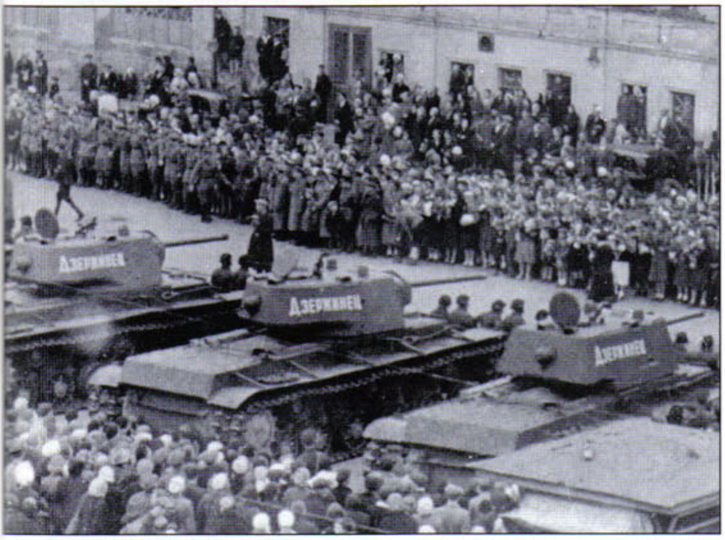
Another special purpose version of the KV-1 was the KV-12 chemica warfare tank. This had special cylinders mounted to the rear fender Although this could be used to dispense smoke, it was primarily intended t dispense chemical warfare gas. Chemical warfare never took place on th Eastern Front, so these were never produced in quantity. (R. Ismagilov)



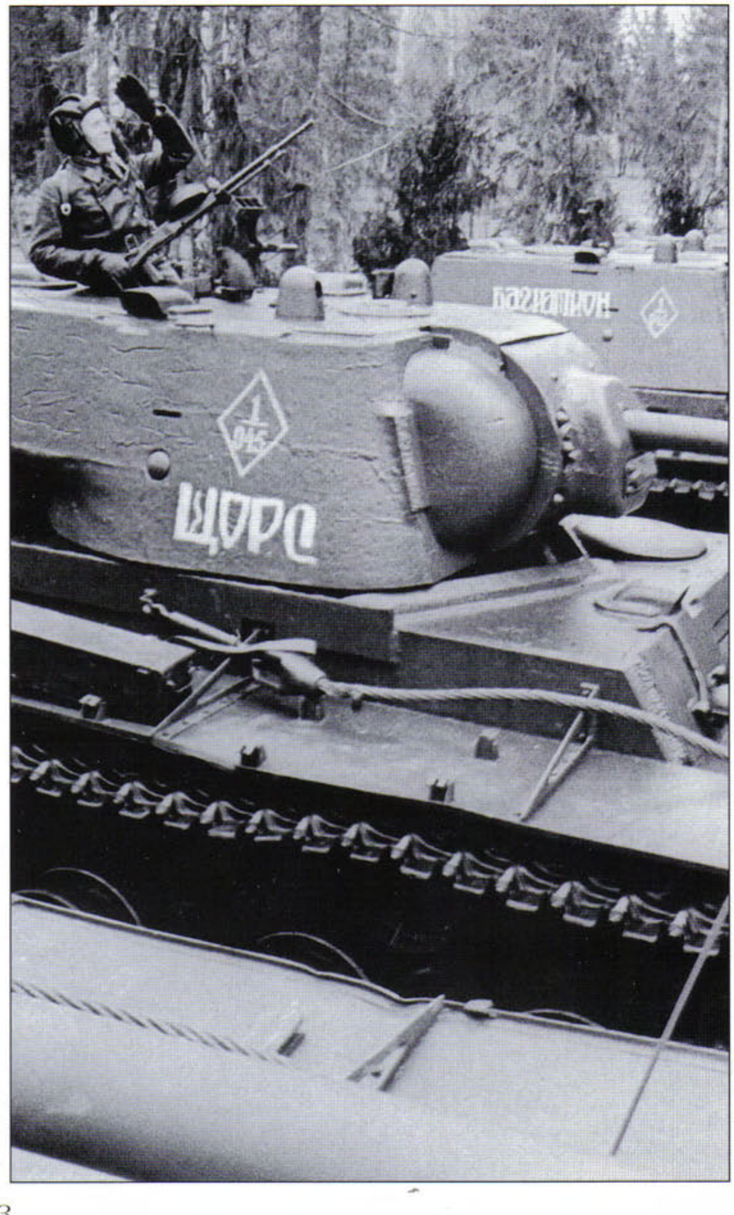
In the autumn of 1941, the main production plant for the KV, th Leningrad Kirov Plant (LKZ) was moved from Leningrad to a new plant i Chelyabinsk. The massive Chelyabinsk plant was dubbed "Tankograd (Tank City) and became the main production center for Soviet heavy tank through the war. This is a view of the production line in 1942. Note tha workers are assembling tanks both with the new cast turret and the olde uparmored welded turret. This is due to the fact that the Chelyabinsk plan received major subcomponents such as turrets from subcontracting plant as well as its own satellite construction facilities. These vehicles have th uparmored hulls which had a squared-off rear panel instead of the curve panel seen on earlier versions of the KV.

This is a rare view of one of the first of the new KV-1 Model 1941 with the original cast turret to be deployed with a tank brigade in the Klin region near Moscow in the winter of 1941-42. The new cast turret was introduced to simplify production of the KV-1. The appliqué armor panel on the hull front is the original style which was higher than the type produced in 1942.

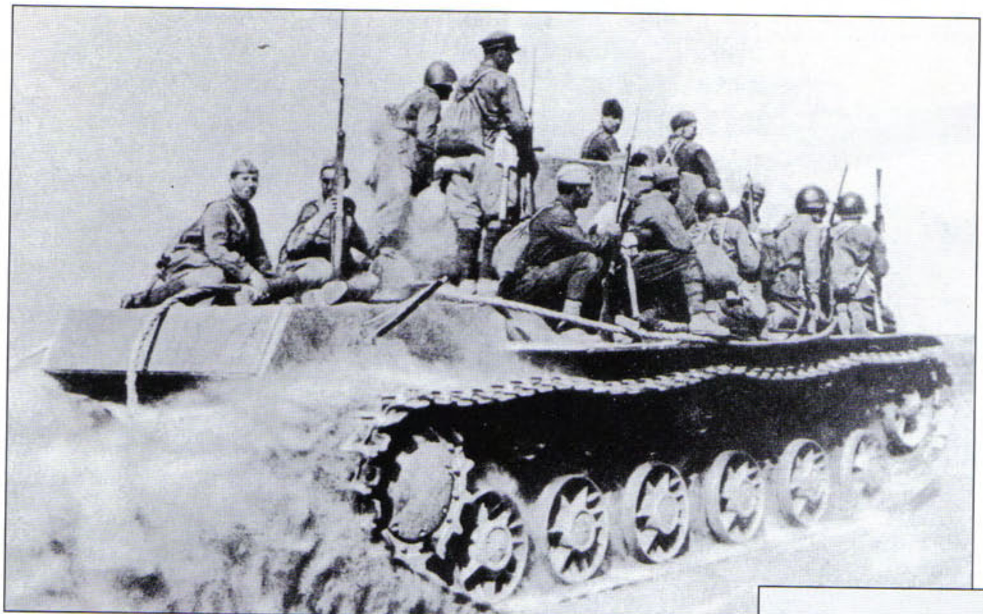




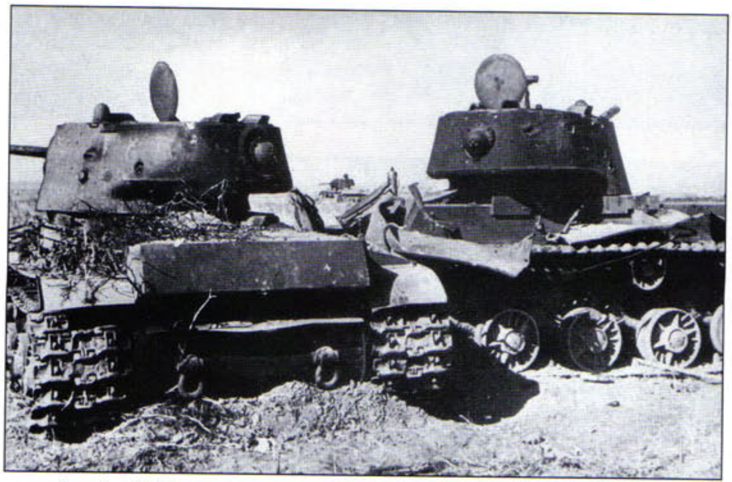
A company of tanks is donated by a Moscow civic group in 1942. In 1942, the Soviet government began to encourage factory workers and other groups to contribute funds to the war effort. When enough had been collected, the money was used to "buy" tanks or aircraft which were often marked with the group's name. These KV-1 Model 1941 tanks, two with cast turrets on the left and one with an uparmored welded turret on the right, carry the name "Dzerzhiniets" on the turret side, presumably from some facility named in honor of Felix Dzerzhinskiy, the leader of the Cheka secret police during the 1917 revolution.



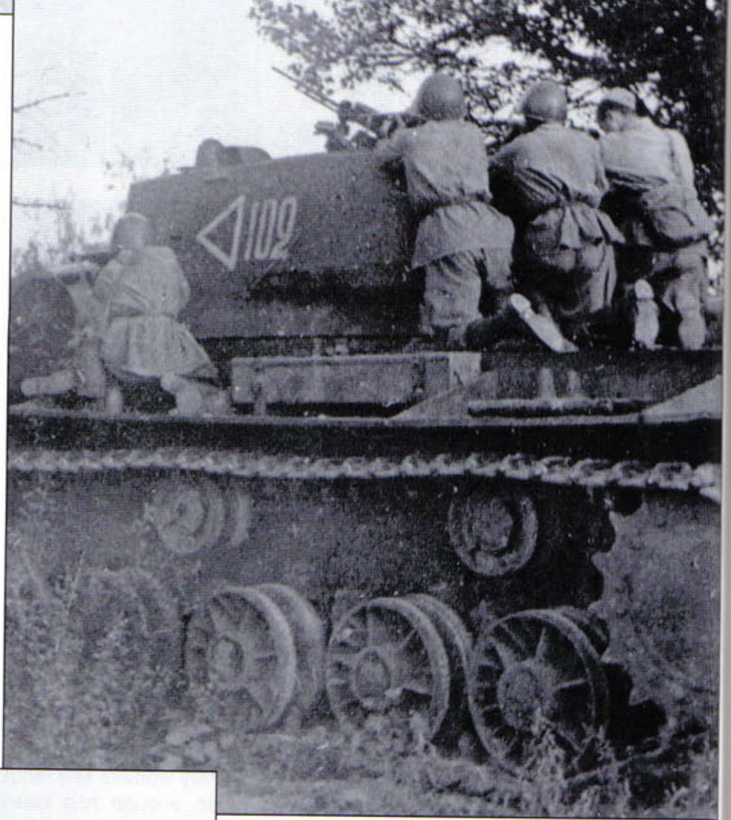
A view of the 116th Tank Brigade in May 1942, this time showing a KV-1 Model 1941 with the cast turret. The vehicle closest to the camera is named Shchors after the Civil War general, while the tank with the uparmored welded turret behind it is named Bagration after the famous prince who was killed in battle in the war against Napoleon. (Chernov)



A KV-1 Model 1941 moves into action in the summer of 1942 with a tank assault (tankoviy desant) team on board. This gives a very clear view of the altered rear hull of the KV-1 common on some 1942 production vehicles where the rounded panel gave way to a simpler squared off shape to permit the use of thicker armor plate.



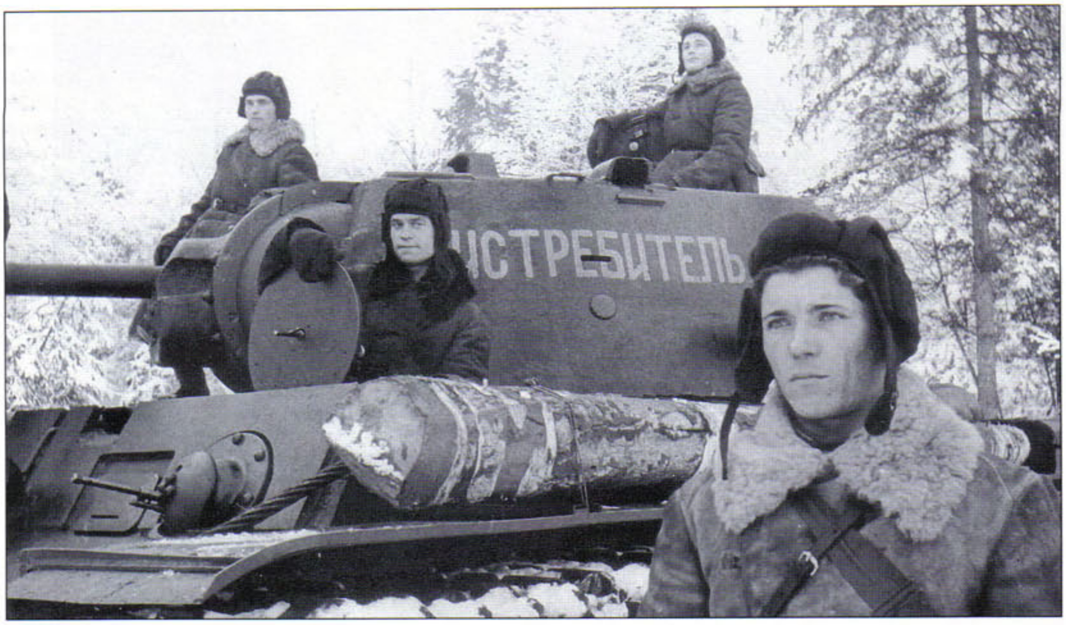
A pair of KV-1 tanks knocked out in the summer of 1942. The tank to the left has the uparmored cast turret, evident by the ring around the rear turret machine gun. The vehicle to the right has the original cast turret configuration.

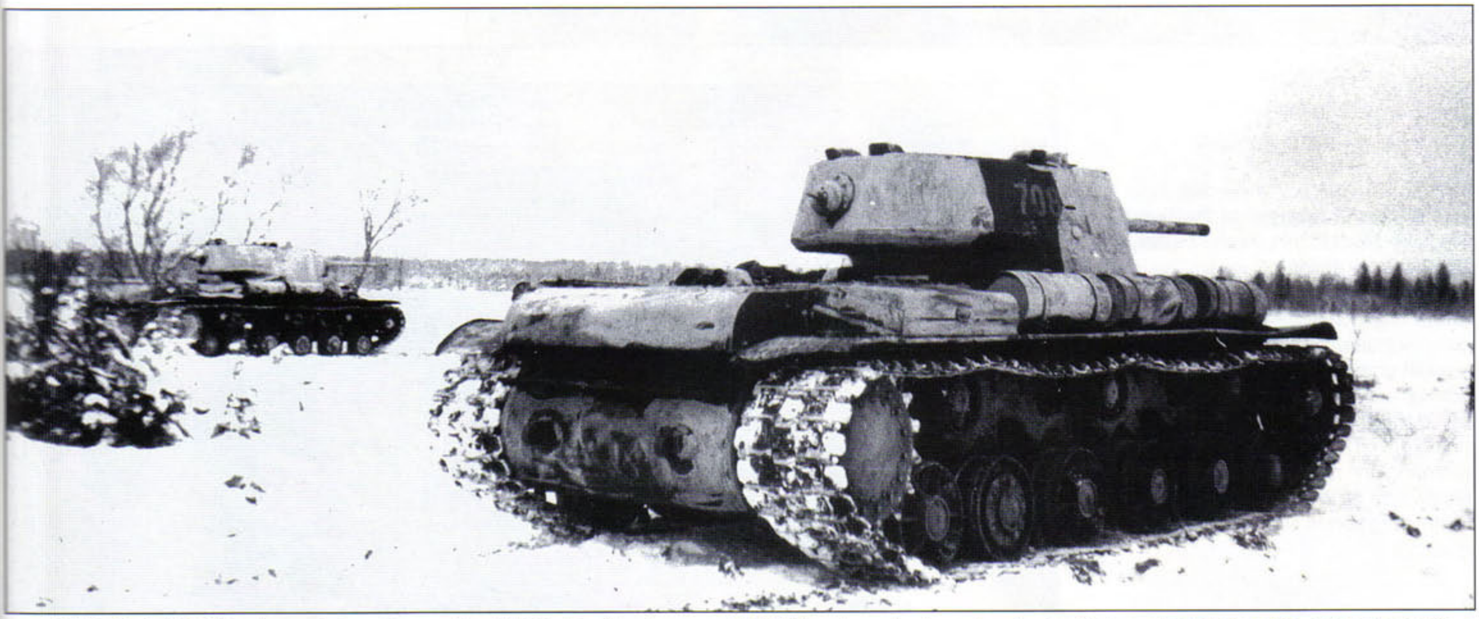


A KV-1 Model 1941 goes into action in the summer of 1942 with tank assault squad on it. The tactical marking and vehicle tactical number suggests that this tank belonged to one of the new tank corps introduced in 1942. Although called corps, they were in fact closer in organization and equipment to a tank division.

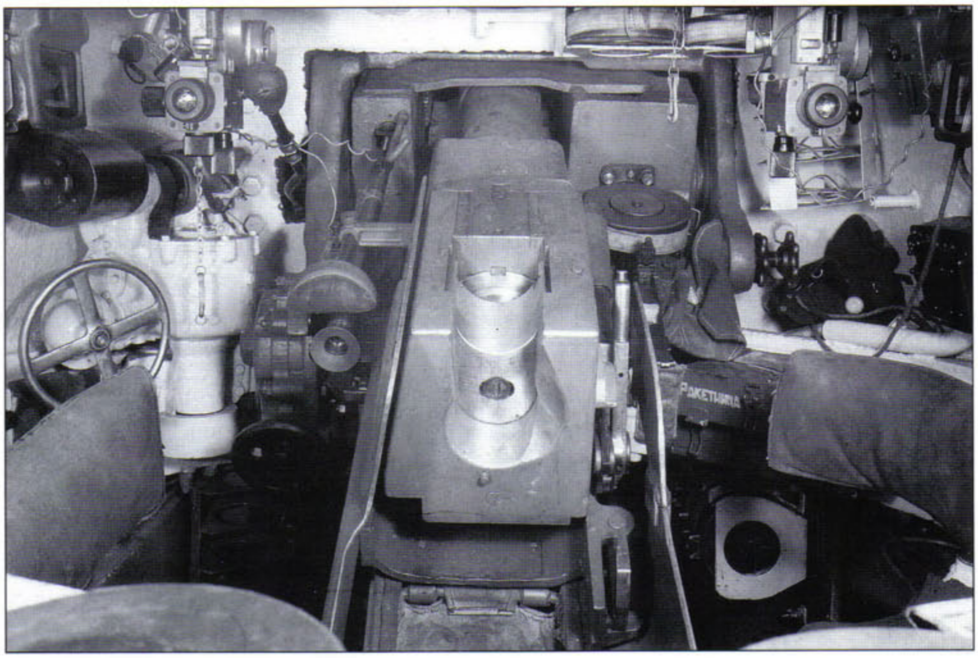
A tank assault squad leaps from a KV-1 Model 1941 during exercises in the winter of 1942. The Red Army lacked armored infantry vehicles, and so used the expedient of having its infantry ride into combat on the backs of its tanks. This is why Soviet tanks tended to have far more hand-holds welded to their tanks than in other armies.

"Istrebitel" (Destroyer), a KV-1 Model 1941 tank commanded by Jr. Lt. I. M. Tovstikh on the Kalinin Front in the winter of 1942. During winter months, Soviet tank crews generally wore sheepskin coats. A large unditching beam is fitted to the fender to help extract the tank if it became bogged down in soft soil. (Maksimov)

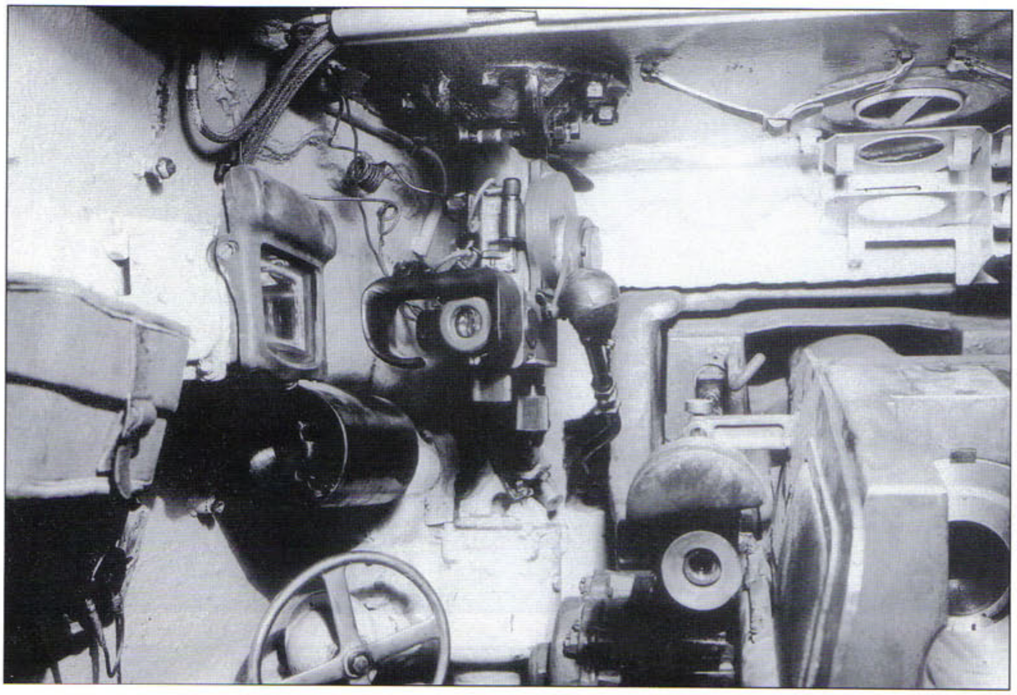




KV-1 Model 1941 tanks go into action on the Kalinin Front in January 1943. The closer tank carries the tactical number 708 and is camouflaged in a pattern of whitewash over patches of the usual dark green. The suspension has at least one of the older style roadwheels due to repair work.

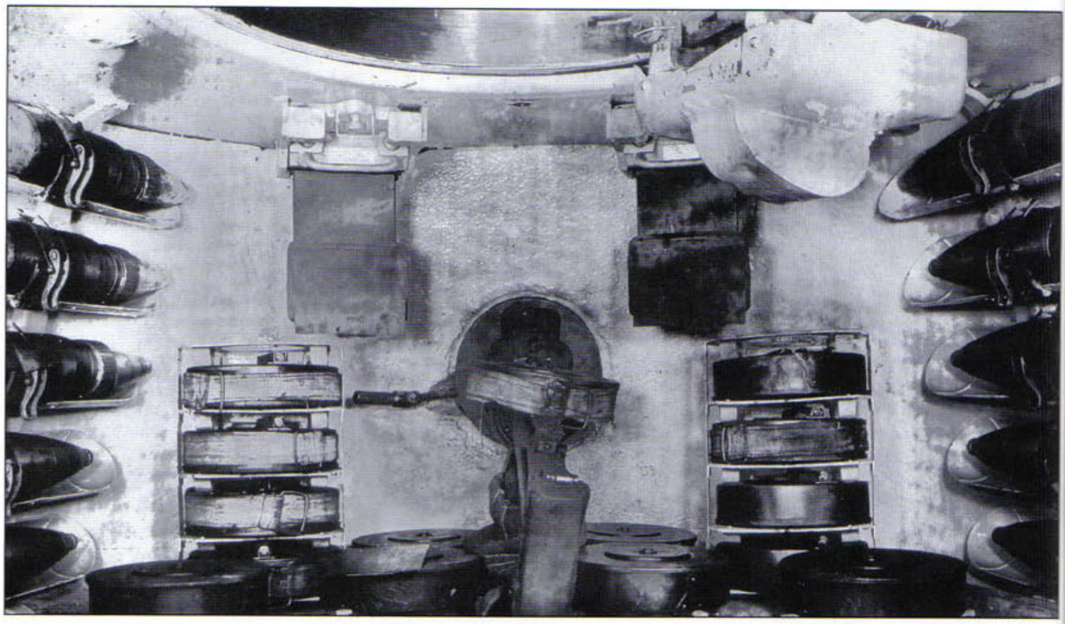


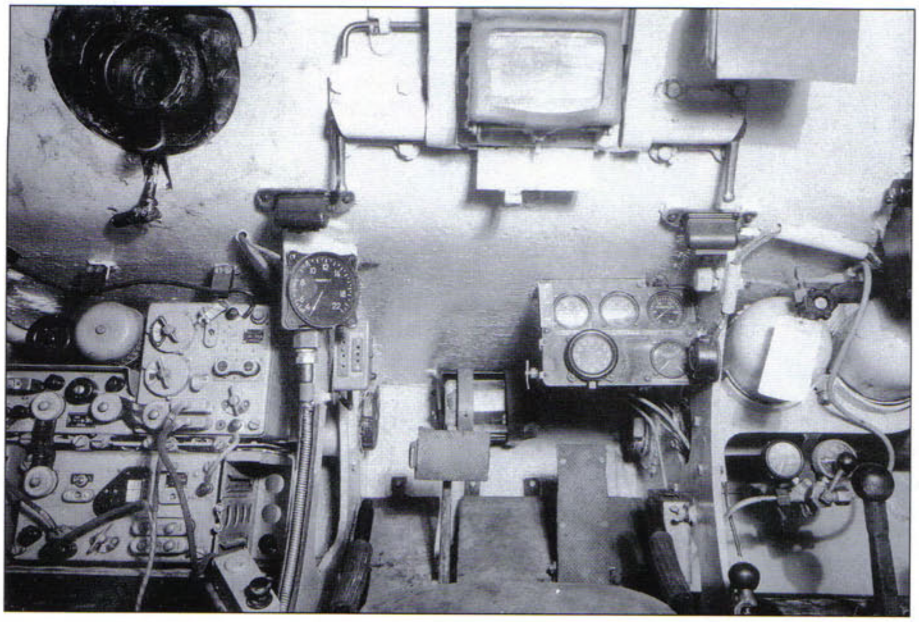
An interior view of a KV-1 Model 1941 cast turret. In the center is the ZIS-5 gun. The tank gunner sat on the left side, while the loader/commander sat on the right. This configuration was poorly suited to modern tank tactics as it distracted the commander from his task of directing the crew and coordinating it with neighboring tanks. However, it was difficult for the commander to switch places with the crewman at the rear of the turret, as that position had no vision devices. (US National Archives)



A close-up of the gunner's station in the KV-1 Model 1941. The gunner had two sets of optics to aim the gun, either the TMFD telescopic sight adjacent to the gun breech, or the PTK periscopic sight mounted in the roof. The large wheel in the lower left of the photo is for manually traversing the turret. (US Army Ordnance Museum, APG)

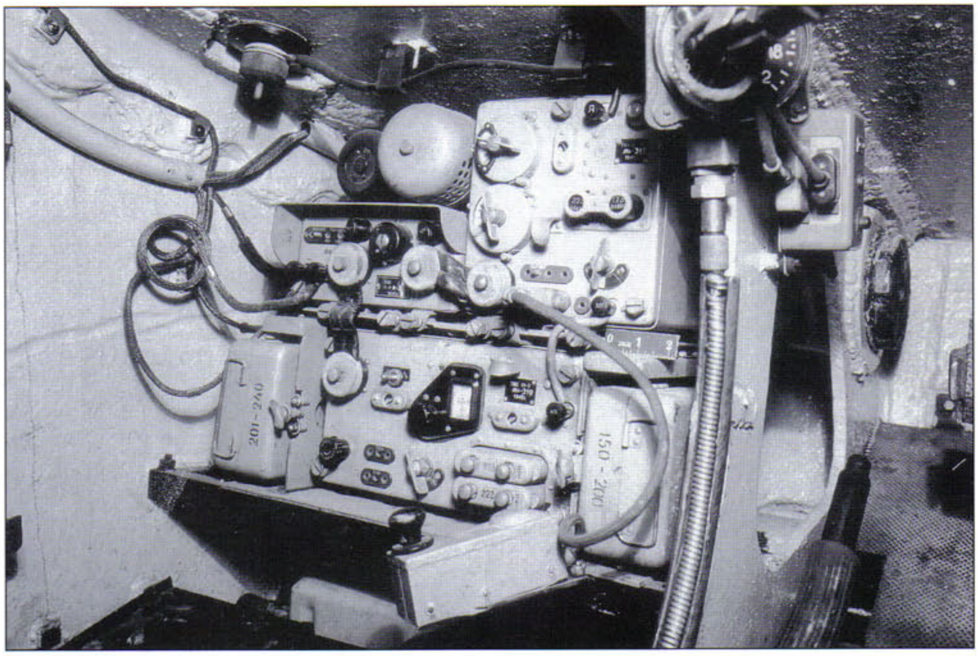
A view of the rear of the turret of the KV-1 Model 1941. At the center is a DT 7.62mm machine gun. The third crewman in the turret has the responsibility for operating this machine gun, intended to provide defense against enemy infantry. This layout was archaic, and due to crew shortages in 1942-43, this position was often left unfilled. The main gun ready ammunition racks can be seen on either side of the turret, as well as the drum magazines for the DT machine gun.

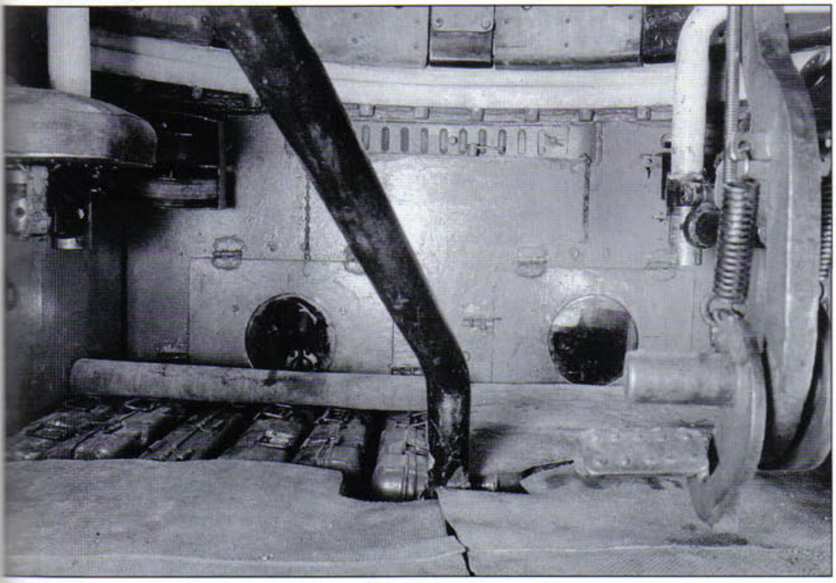




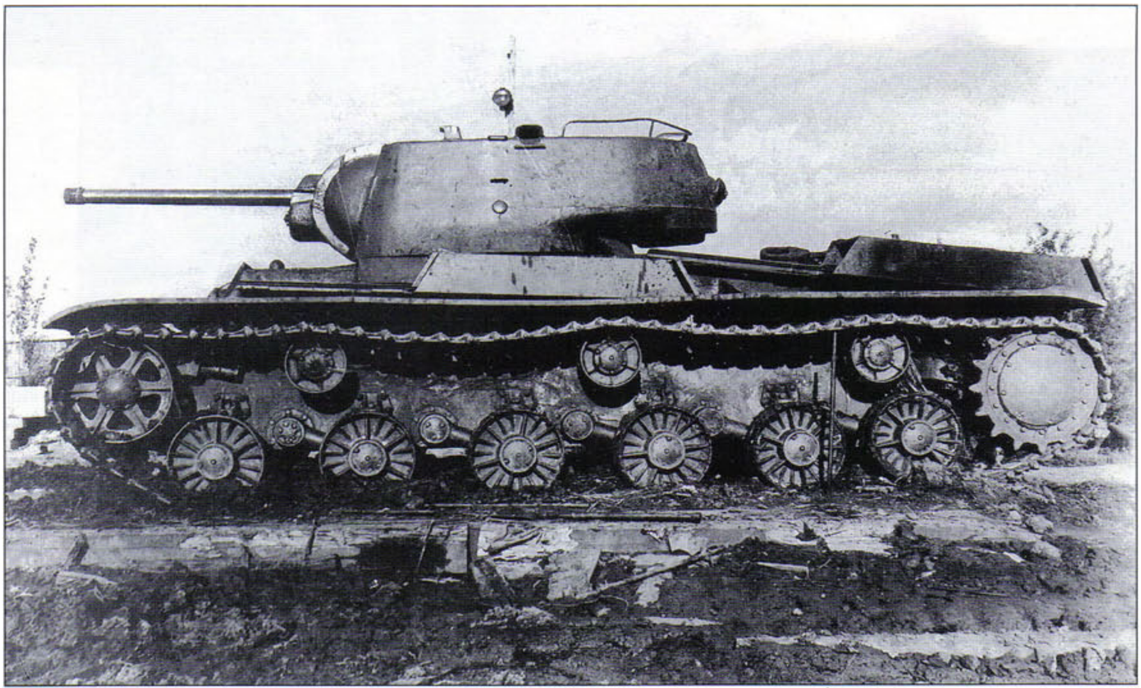
A view of the driver's station in the KV. The driver sat in the center of the hull, and his controls are evident in this view. To the left was the station for the radio-operator/hull machine gunner. The socket for the front DT machine gun is evident in this view, although the machine gun is not fitted. (US National Archives)

A close-up view of the 10-R radio receiver-transmitter. Soviet tank units were slower than the Germans in being fully equipped with radio receiver-transmitters. In 1942, most KV tanks had receivers, but usually only platoon and company commanders had a full receiver-transmitter set such as is seen here. (US Army Ordnance Museum, APG)

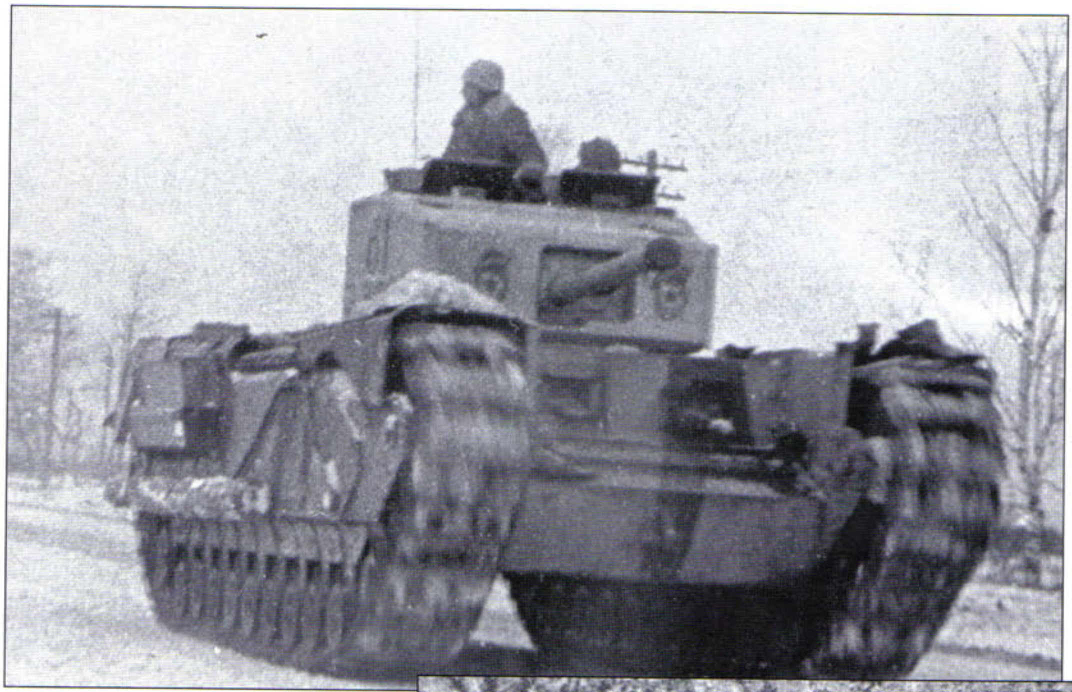




A view looking back from the driver's station towards the rear firewall at the back of the fighting compartment. The most striking detail in this photo is that Soviet tanks did not have turret baskets. The large pipe in the center of the photo was a conduit for electrical lines running up into the turret. The device at the right is the gunner's firing pedals, while the loader's seat can be seen at the left. The floor consisted of metal stowage boxes containing 76.2mm tank gun ammunition. These containers were covered by rubber floor mats, one of which has been pulled away to the left to show the ammunition containers. (US National Archives)

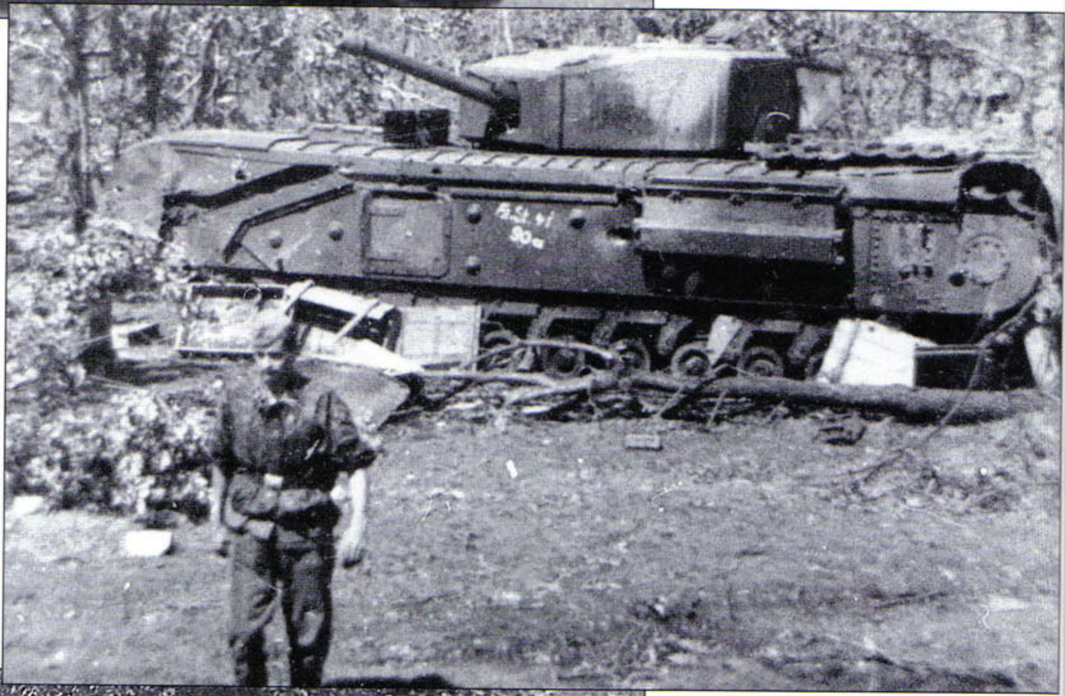


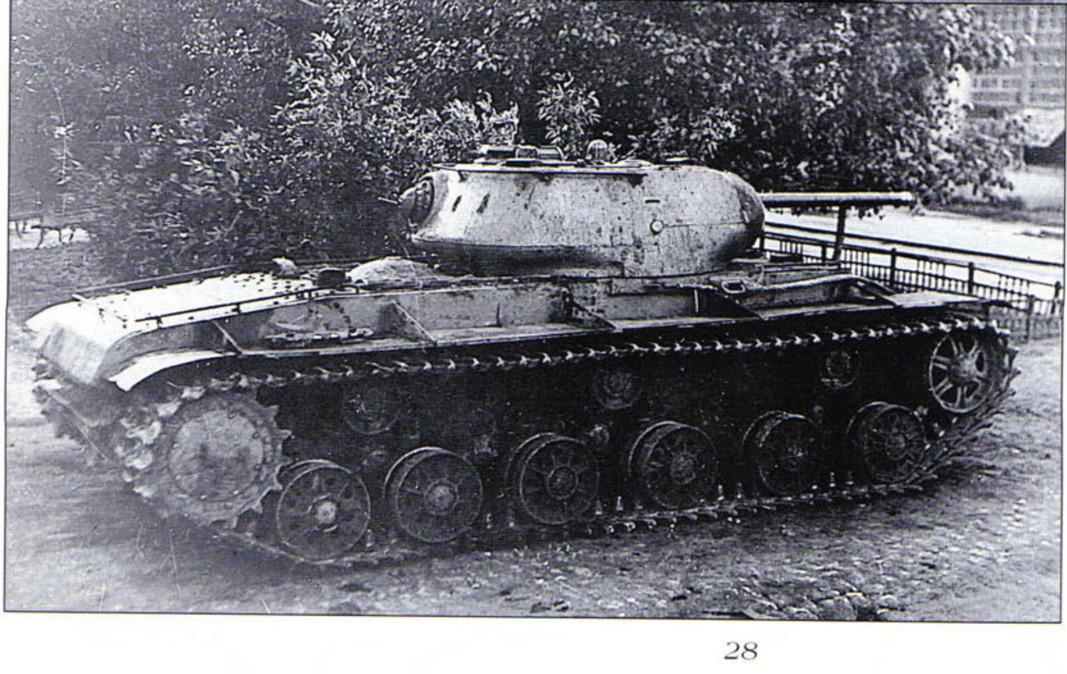
To increase the firepower of the KV-1, experiments were conducted in mounting Katyusha rocket launchers on the fenders. There were two boxes on each side and each of the boxes contained two RS-82 82mm rockets. The KV-1K was never put into series production, probably due to the inherent inaccuracy of the rockets.



The only Allied heavy tank supplied to the Soviet Union in any significant numbers was the Churchill. Only 301 Churchills were shipped to Russia, and of these, 43 were lost in transit making it one of the rarer types in service. This is a Churchill Mk. III, probably from the 15th Guards Heavy Tank Regiment. This unit was one of the few Guards units equipped with Churchills and was first committed to action in support of the 21st Army near Stalingrad in February 1943. It was re-equipped later in the year with KV-85s. It carries the tactical number 61 and the name Aleksandr Nevskiy, after the legendary medieval prince who defeated the Teutonic Knights, and Guards insignia on the turret front.

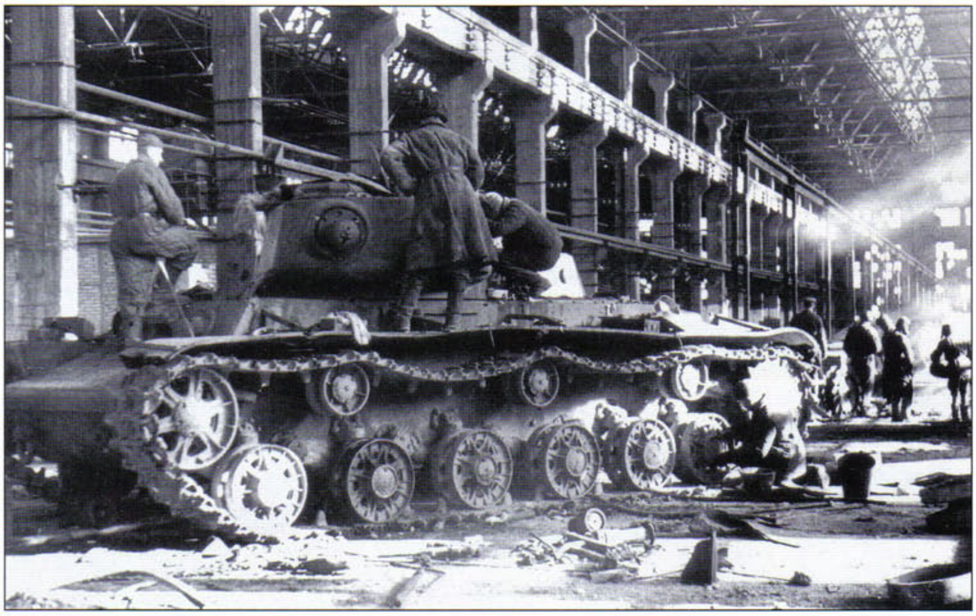
A Churchill Mk. III knocked out during the battle of Kursk in July 1943. Although not evident in this photo, the tank carried the Ukrainian slogan "Za radyansku Ukrainu!" (For Soviet Ukraine) on the turret side in red paint. During the 5th Guards Tank Army's attack at the key battle of Prokhorovka, its only heavy tanks were 35 Churchills of the 36th Guards Heavy Tank Regiment supporting the 18th Tank Corps.

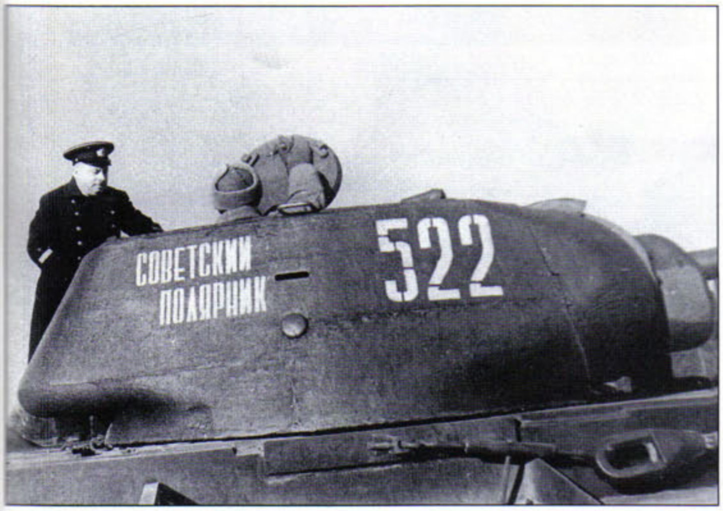




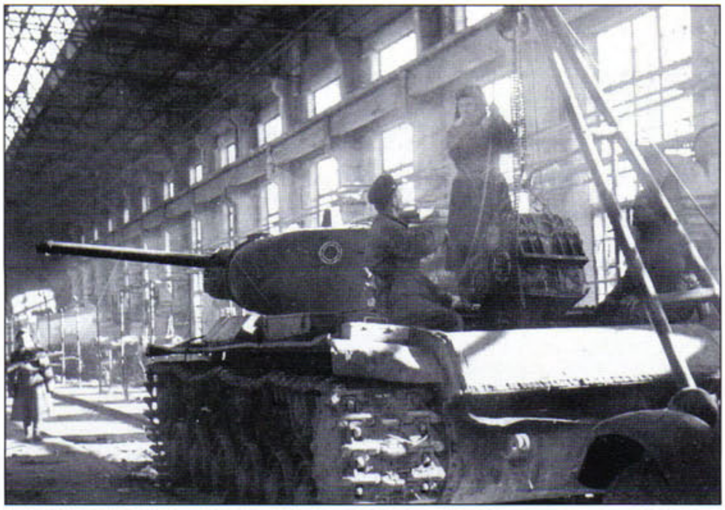
Concern in tank units over the sluggish performance of the KV-1 forced the designers to develop a *lighter version, the KV-1S, the* "S" indicating skorostnoi or "speedy". The most evident change in this design was the use of a new turret that was significantly smaller and lighter than the cast turret previously in use. Another change on the KV-1S was the addition of a vision cupola for the commander who was shorn of his loader's responsibilities and moved behind the gunner on the left side of the turret. Finally, the hull rear was changed with a more noticeable slope to the rear roof.

By the time of the Stalingrad battles in the autumn of 1942, the KV-1S was becoming the predominant tank type in Soviet separate heavy tank regiments. Here, a hall of the Stalingrad Tank Factory (STZ) is being used as a repair station for a number of KV-1S heavy tanks in November 1942. This also gives a good view of the new light weight wheel introduced on the KV-1S. (E. Evzerikhin)

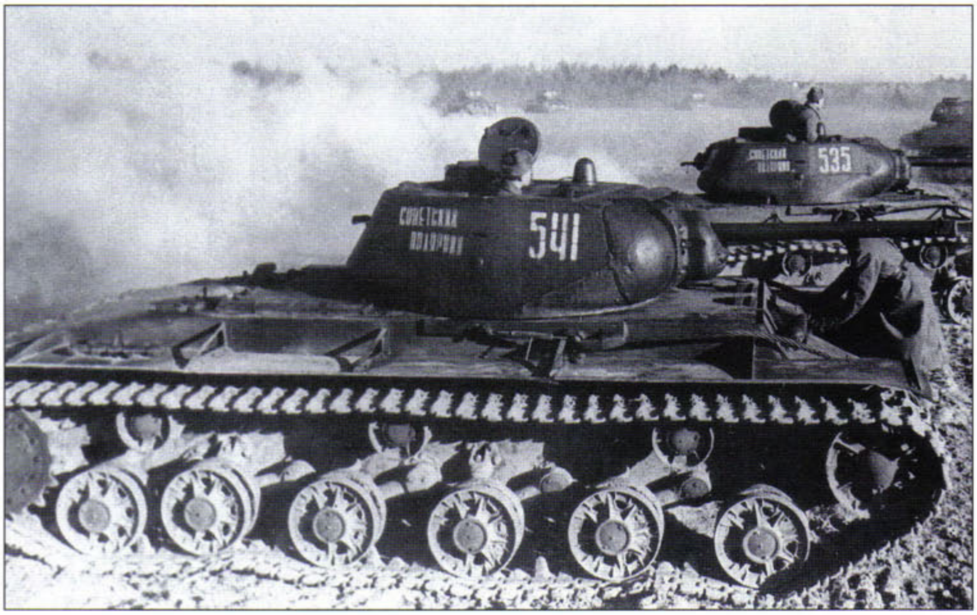




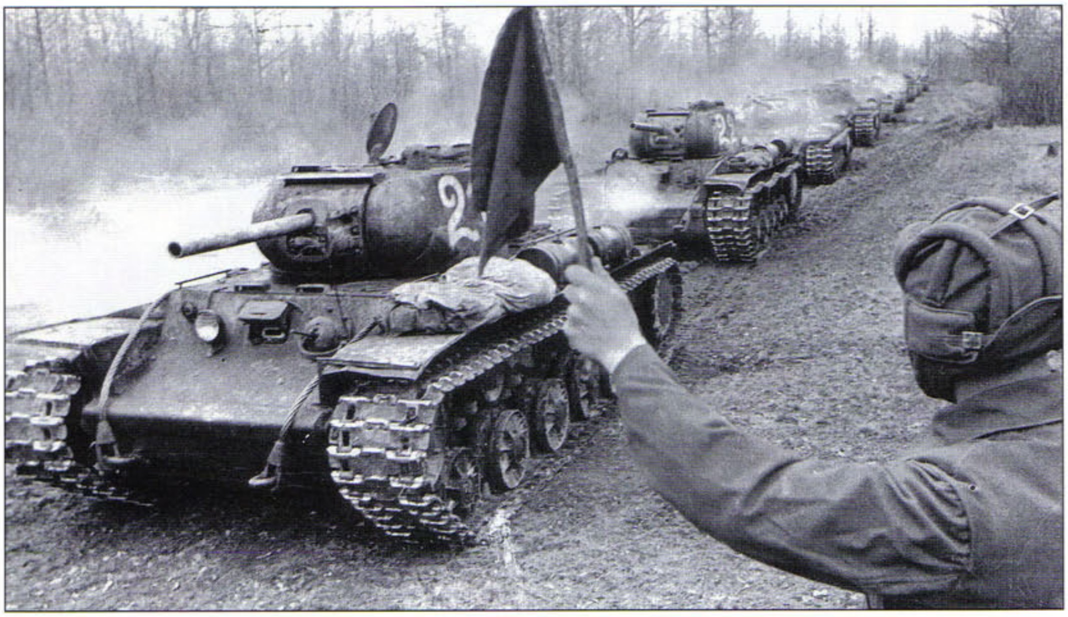
This close-up of the turret of a KV-1S of the 5th Guards Tank regiment shows the dedication inscription Sovyetskikh Polyarnik (From the Soviet Arctic Explorers). Curiously enough, the new KV-1S turret had only one hatch- there was no hatch on the commander's vision cupola. The naval officer to the left is I. D. Papanin, the commander of Glavsevmorput, taking part in the October dedication ceremony in the Moscow Military District when the tanks were handed over to the tank regiment. Some of the tanks in the unit were later named after Papanin, who was a famous Arctic explorer before the war.



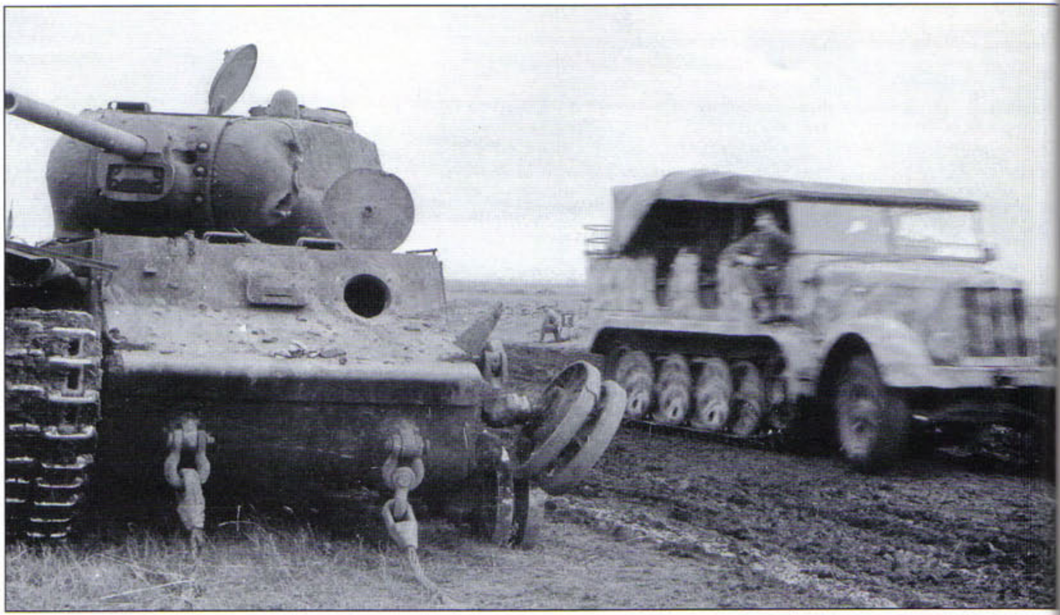
Here, the crew of a KV-1S assist in changing the transmission of a KV-1S using a truck-mounted jib crane inside the Stalingrad Tractor Plant in November 1942. On the side of the tank turret is the unit's tactical symbol, a pair of concentric broken circles. (Sofin)



In October 1942, the 5th Guards Heavy Tank Regiment was given 21 new KV-1S tanks from funds donated by the Glavsevmorput, which conducted Arctic sea voyages. This regiment took part in the fighting at Stalingrad in December 1942 near Kazachiy Kurgan, northwest of the city in support of the 65th Army of the Don Front.



Tanks of the 6th Guards Heavy Tank Regiment on exercise in late 1942 in the Moscow Military District. This new unit was committed to action with the Don Front near Stalingrad late in 1942. It was equipped with the KV-1S until March 1944 when it was re-equipped with IS-2 heavy tanks. (O. Knorring)



A KV-1S knocked out during the summer 1943 Kursk battles as a German SdKfz 7 half track passes by. The tank has been hit at least twice on the front side of the turret, while another shot has knocked off the hull machine gun and ripped off the front idler wheel. From the tow cables in front of the tank, some effort was made to tow it away before it was finally abandoned.

The officers of the 68th Independent Kalinkovichi Tank Brigade receive instructions from the unit commander, Lt. Col. G. A. Timchenko in the center during the winter 1943-44 fighting. In the summer, the unit had supported the 61st Army during the liberation of Volkhov, and in January 1944 took part in the liberation of Kalinkovichi as part of the Mozyr operation from whence it received its honorific title.

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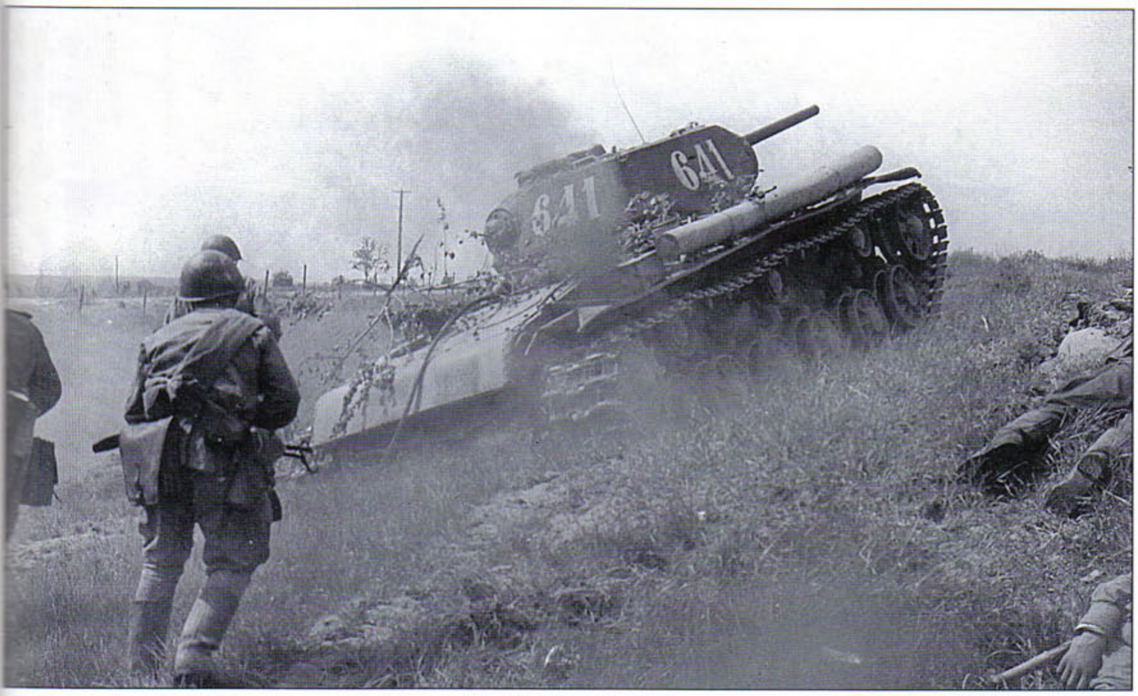
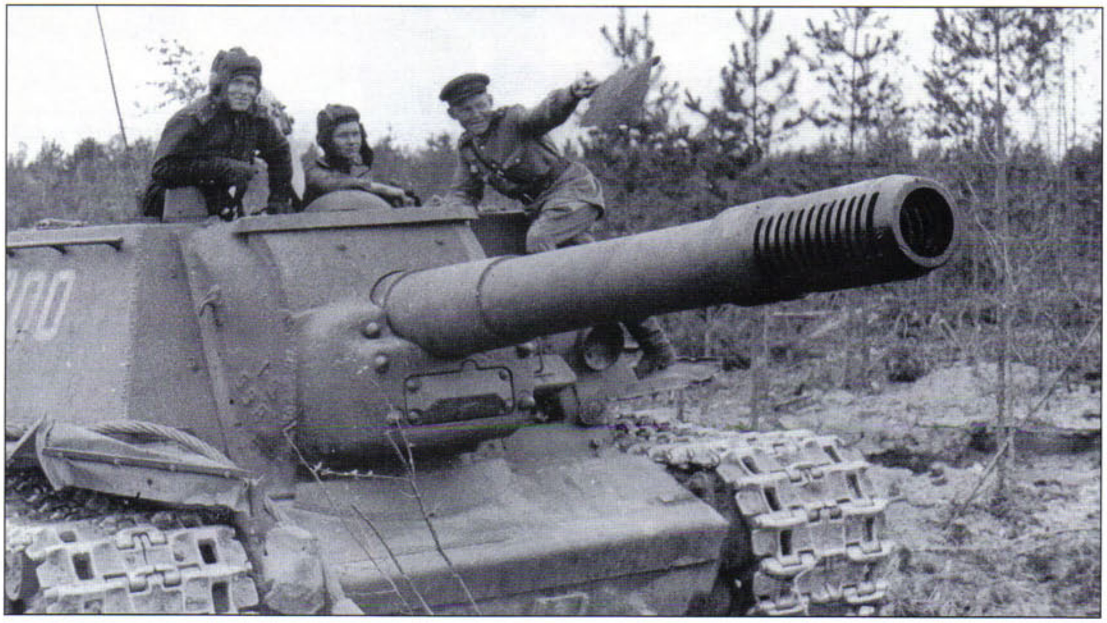
ПАПАНИН

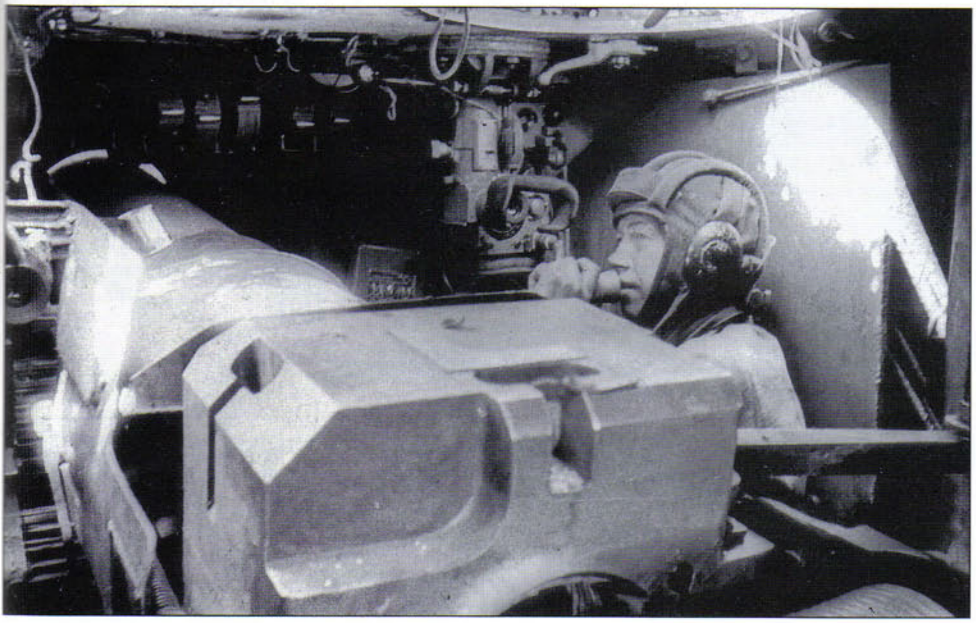
The crew of a KV-1S commanded by Lt. S. Nikolyev of the 5th Guards Zaporozhe Heavy Tank Regiment near Orel during the summer 1943 battles of the Kursk-Orel salient while supporting infantry units of the 8th Guards Army. This is the same unit shown in earlier photos when the KV-1S tanks were first presented to the regiment. Although most of the unit tanks were inscribed to "Soviet Arctic Explorers", others were name in honor of I. D. Papanin as seen here, an arctic explorer who headed the naval organization which donated the tanks. (Birzhukov)



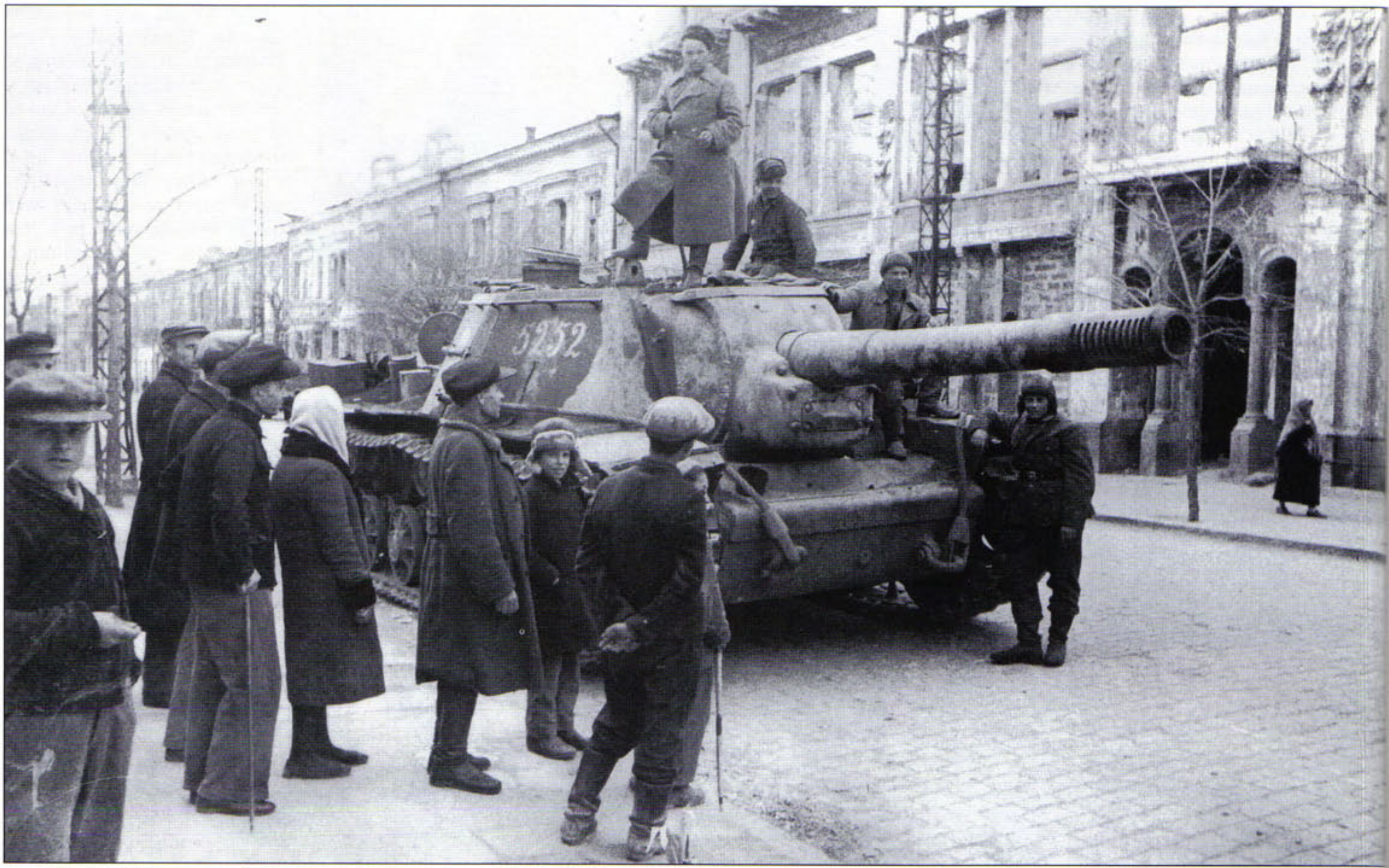
A KV-1S, from the 260th Guards Breakthrough Tank Regiment of the Leningrad Front, supporting a Red Army infantry attack on the Karelian isthmus against Finnish forces in June 1944. By this time, many heavy tank regiments were being re-equipped with the new IS-2 heavy tank, but the KV-1S still remained in service in dwindling numbers. A total of nine heavy tank regiments took part in the assault on the Karelian isthmus in June 1944 including at least one IS-2 regiment. (Suchatov)



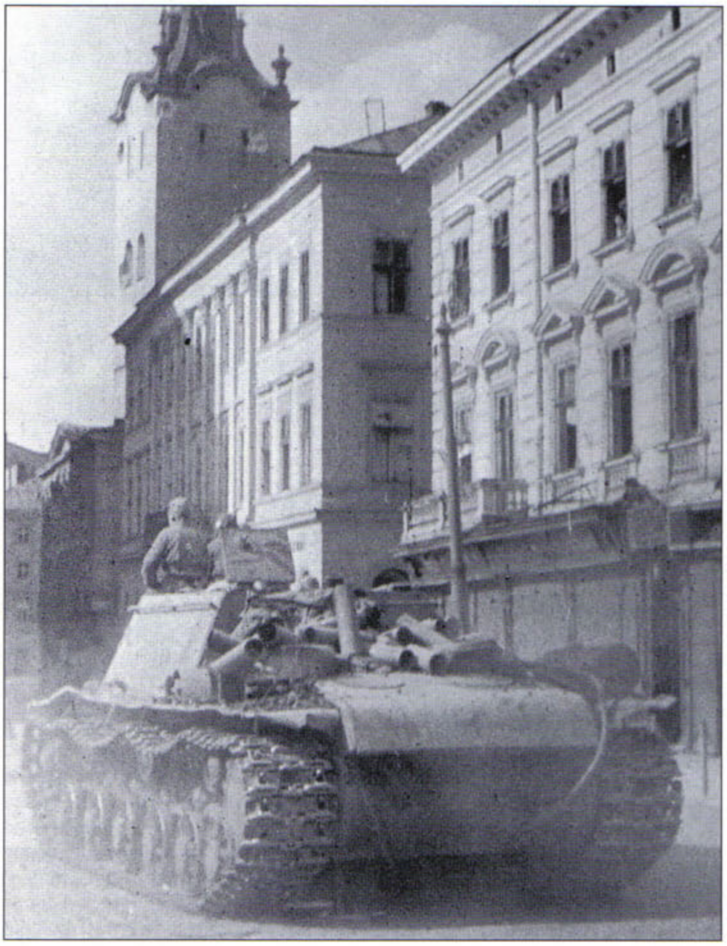
The battery commander of this SU-152 unit, Guards Capt. F. N. Nagovitsyn provides instructions to the assault gun's commander, Lt. S. F. Berezin during operations on the 2nd Baltic Front in 1944. The SU-152 was built in modest numbers, only 704 being built. (Soloviev)



The interior of the SU-152 was very cramped, as can be seen from this shot inside a vehicle on 6 July 1943 during the battle of Kursk. Although intended for direct fire support, during the Kursk battle the SU-152 was used occasionally as a tank destroyer since it was one of the few Soviet armored vehicles with a gun large enough to penetrate the new Tiger, Panther and Elefant. Its success in this role led to its nickname "Zvierboi"- Animal Hunter. (P. Troshkin)

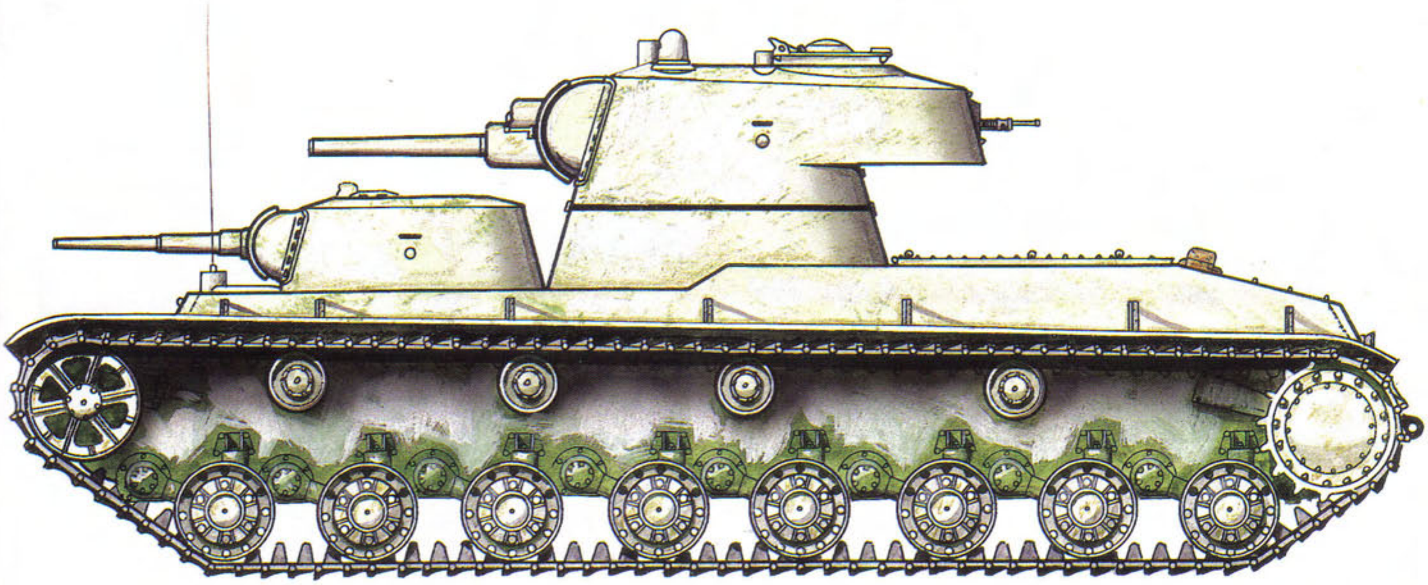


This SU-152 was part of the 1824th Heavy Assault Gun Regiment, a heavy assault gun regiment attached to the 19th Tank Corps in the wake of the Kursk battles in the summer of 1943. It took part in the offensive operations in Ukraine, and in April took part in the liberation of the Crimean peninsula with 4th Ukrainian Front. By this stage, the assault gun regiment was no longer officially a part of the corps due to attrition, but this vehicle survived and was stil in use at Simferopol, on the Crimean peninsula on 13 April 1944.



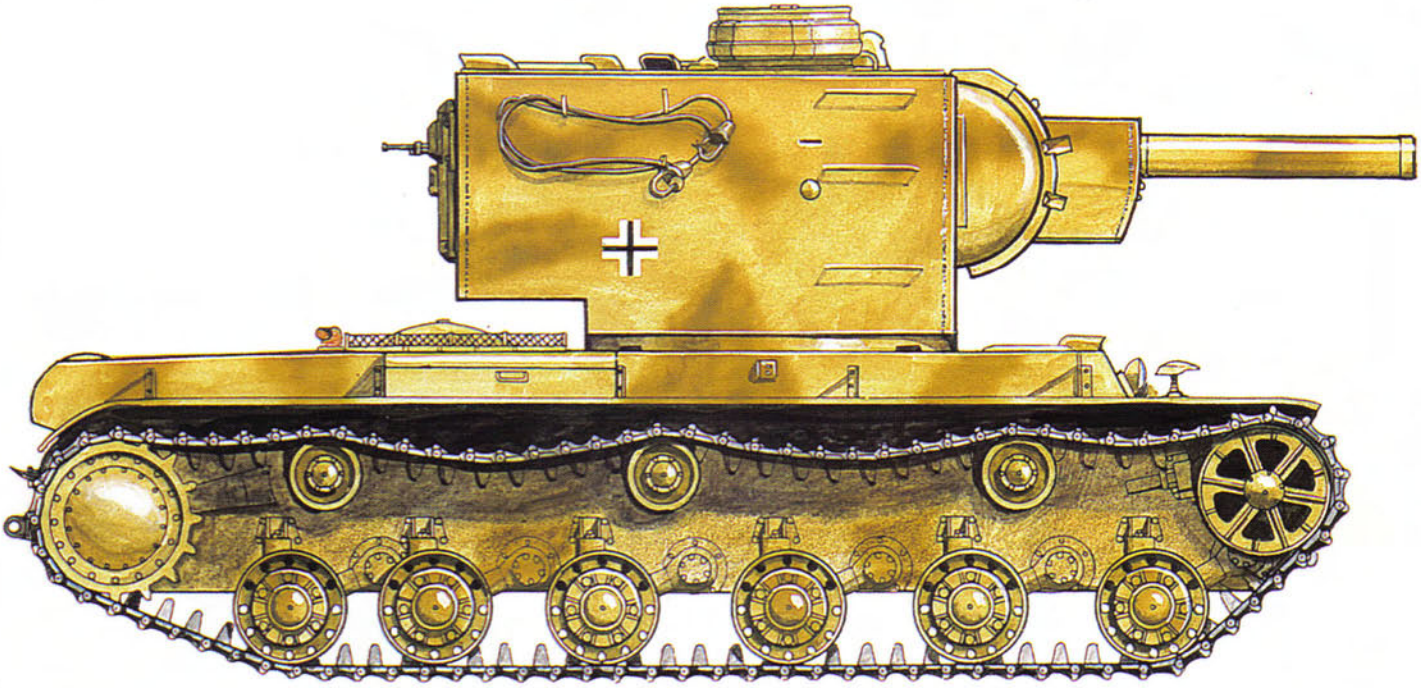
A SU-152 heavy assault gun during the winter 1943-44 fighting. The crew of the regiment takes a break around a fire during a lull in operations. At this time, heavy self-propelled artillery regiments each had 21 SU-152 assault guns.

By the summer of 1944, most SU-152s had been lost through attrition during the previous year of fighting and were being replaced by the more modern ISU-152. However, some continued to soldier on, as we see here on 27 July 1944 with a SU-152 of the 368th Guards Heavy SP Artillery Regiment which supported the 4th Guards Tank Corps of the 60th Army, 1st Ukrainian Front during the capture of Lvov in western Ukraine. The engine deck of the vehicle is littered with spent ammunition cases.



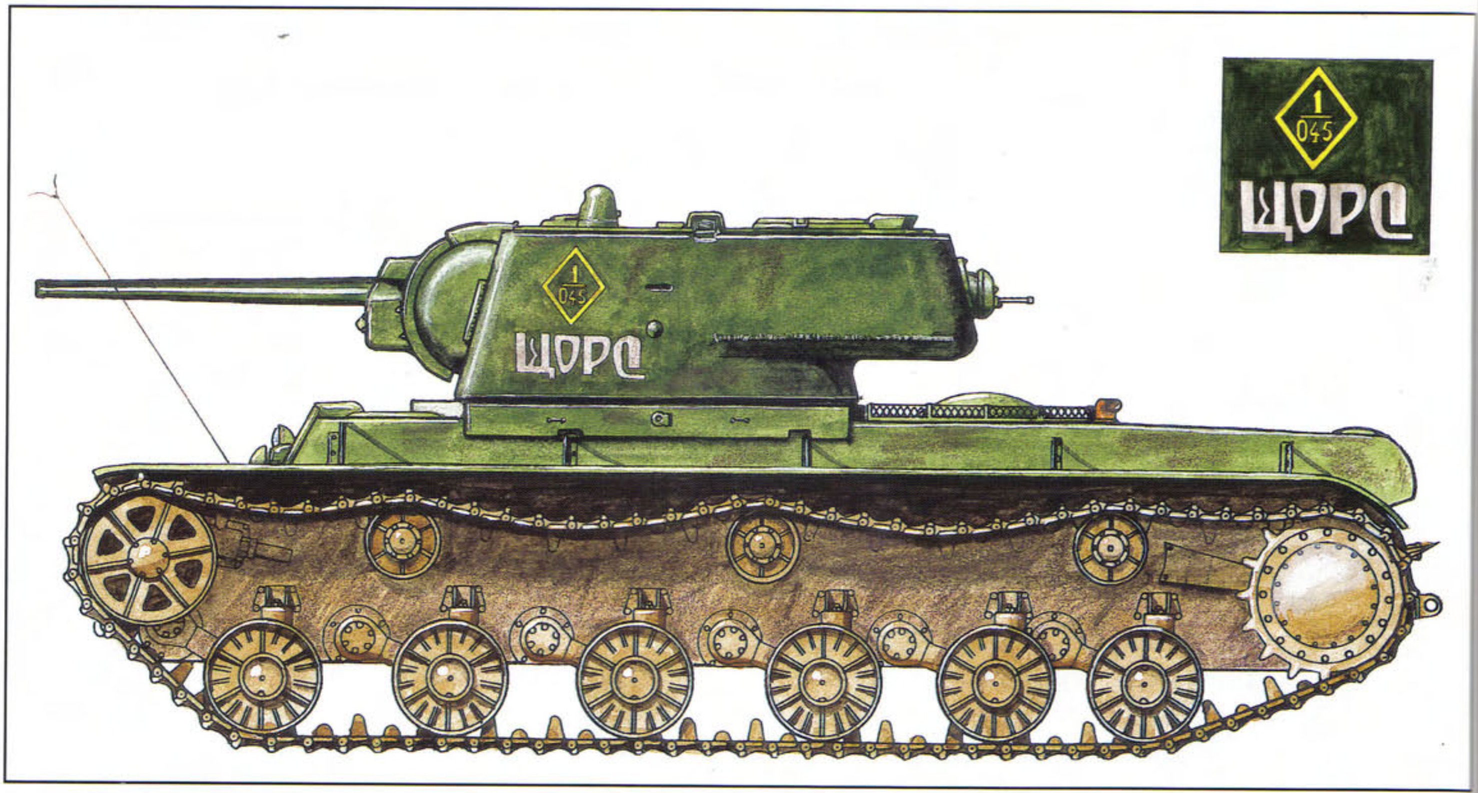
SMK, Special Company, 20th Tank Brigade, Summa, Finland, January 1940

A single SMK heavy tank prototype was dispatched to the Finnish Front for trials purposes with a special company under the command of Major P. Voroshilov. It was manned by a factory crew, and took part in the assault on Finland's Velikan bunker complex near Summa. During the fighting, it ran over a remote control mine, and was disabled. The huge size of the tank made it very difficult to recover, and this was not accomplished until after the war ended. During the fighting, it was finished in a hasty coat of whitewash over the usual dark green Soviet paint scheme.



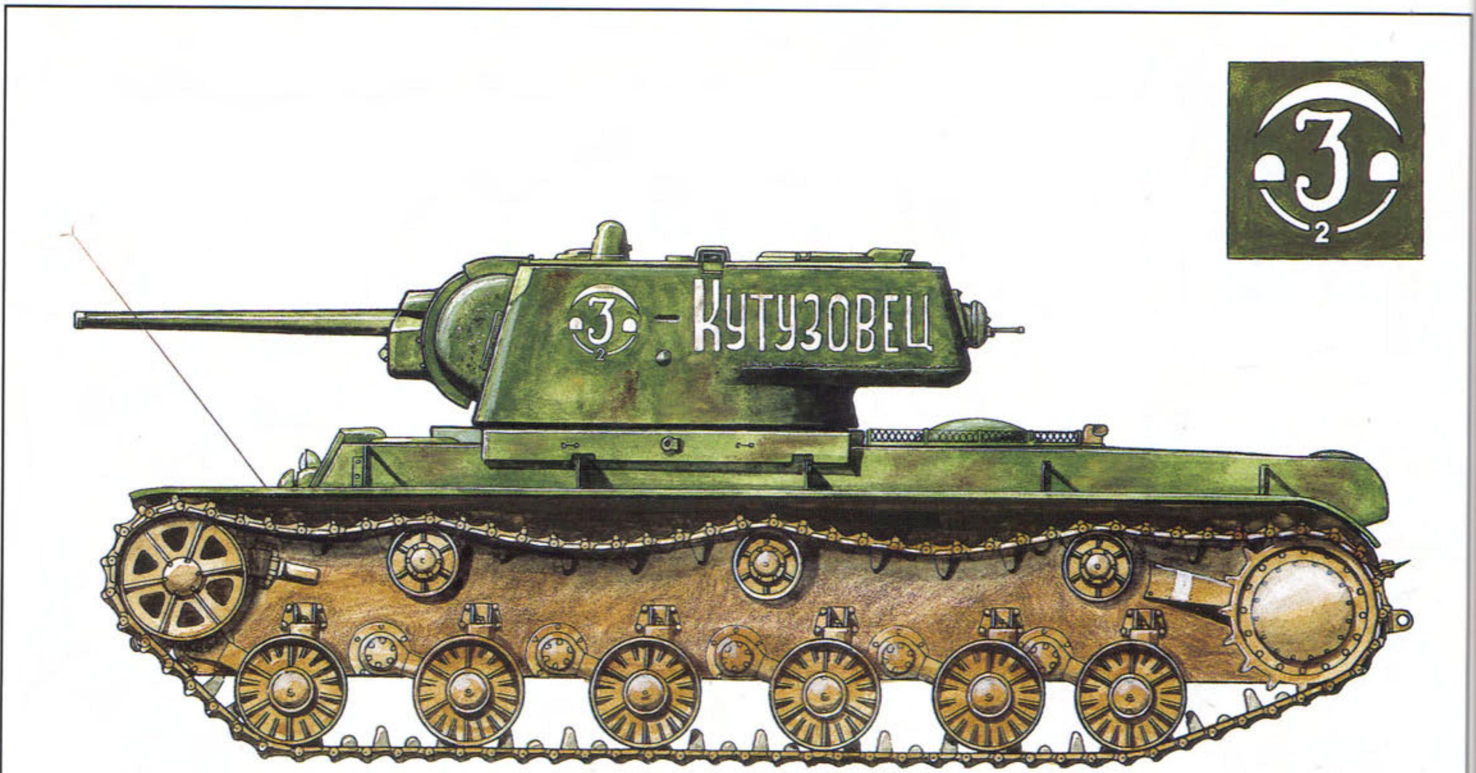
KV-2 Model 1940 PzKpfw KW II 754 (r), Panzerkompanie (z.b.v.) 66, Malta invasion force, 1941

In the spring of 1941, the Wehrmacht was debating whether to invade British-held Crete or Malta as part of their Mediterranean campaign. In the wake of the summer invasion of the Soviet Union, several KV-2 tanks were captured intact, and seemed ideally suited to serve as bunker busters for operations on Malta. Several KV-2s along with some captured T-34s were formed into a special company of (z.b.v.) 66 for the Malta operation. In the event, the high costs of Operation Merkur against Crete led to the Germans abandoning plans to invade Malta. The KV-2s were later committed to the fighting near Demyansk in August 1942. The KV-2s selected for Malta were painted in the March 1941 tropical camouflage scheme of RAL 8000 Gelbbraun (Yellow-brown) and RAL 7008 Graubraun (Gray-brown). They carried the usual national insignia, and were modified with an added PzKpfw III commander's cupola.



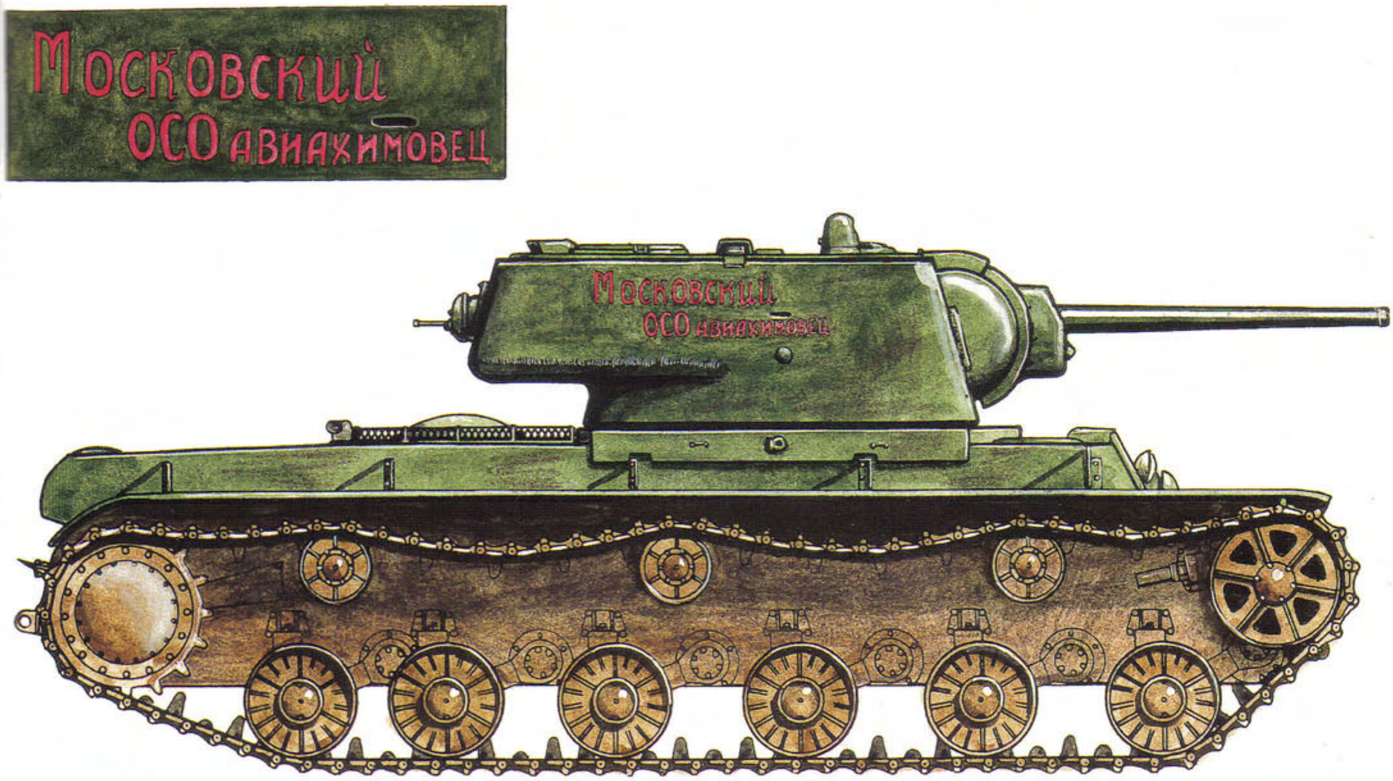
KV-1 Model 1941, 116th Tank Brigade, Western Front, May 1942

This unit was formed in February-March 1942 in the Volga Military District and trained until July 1942 when it was committed to action around Voronezh. The unit is well known, having been the subject of a visit by Soviet combat photographers during training. Typical of Soviet tank units in early 1942, it was marked with patriotic slogans and names, especially names of famous Russian generals. In this case, it is named after Nikolai A. Shchors, a Communist partisan leader in the 1918 civil war and later infantry division commander in the fighting in Ukraine in 1919. The diamond insignia is the standard Soviet map symbol for tanks and was commonly used as the basis for tactical road march symbols. The 1 at the top indicates the first battalion of the brigade, the 323rd Tank Battalion; the 045 is the brigade code number.



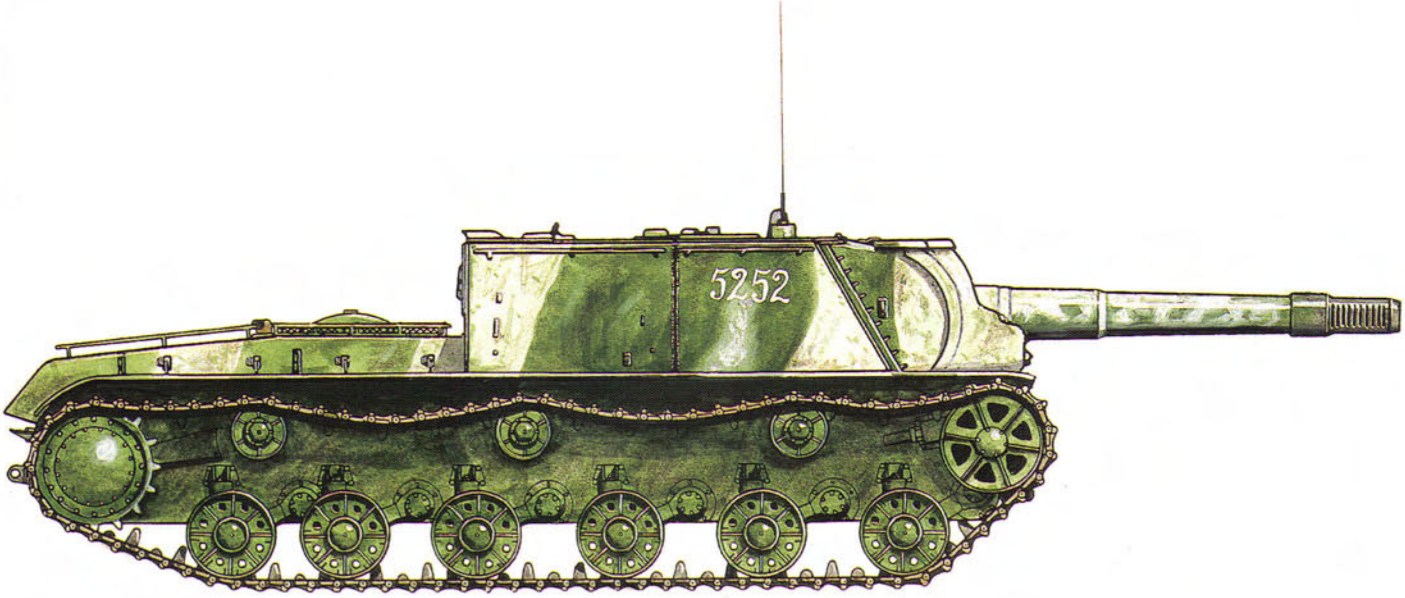
KV-1 Model 1941, 2nd Battalion, 3rd Guards Tank Brigade, 7th Tank Corps, May 1942

This unit was formed in August 1941 as the 8th Tank Brigade which fought during the winter 1941 battles for Moscow. It was re-equipped in January 1942 on the Kalinin Front and given the honorary Guards designation for its distinguished role in the Moscow fighting. After heavy fighting against the German 3rd Panzer Army at Rzhev, it was re-equipped a third time in March 1942. In April it became one of the core units of the 7th Tank Corps, taking part in the summer 1942 battles near Voronezh. The brigade used its own distinctive insignia, as shown here. Sometimes, the battalion number was painted in the small gap at the base of the insignia. The brigade's tanks were normally painted with the names of famous Russian heroes, in this case "Kutuzovets" after the legendary Marshal Kutuzov of Napoleonic wars fame.



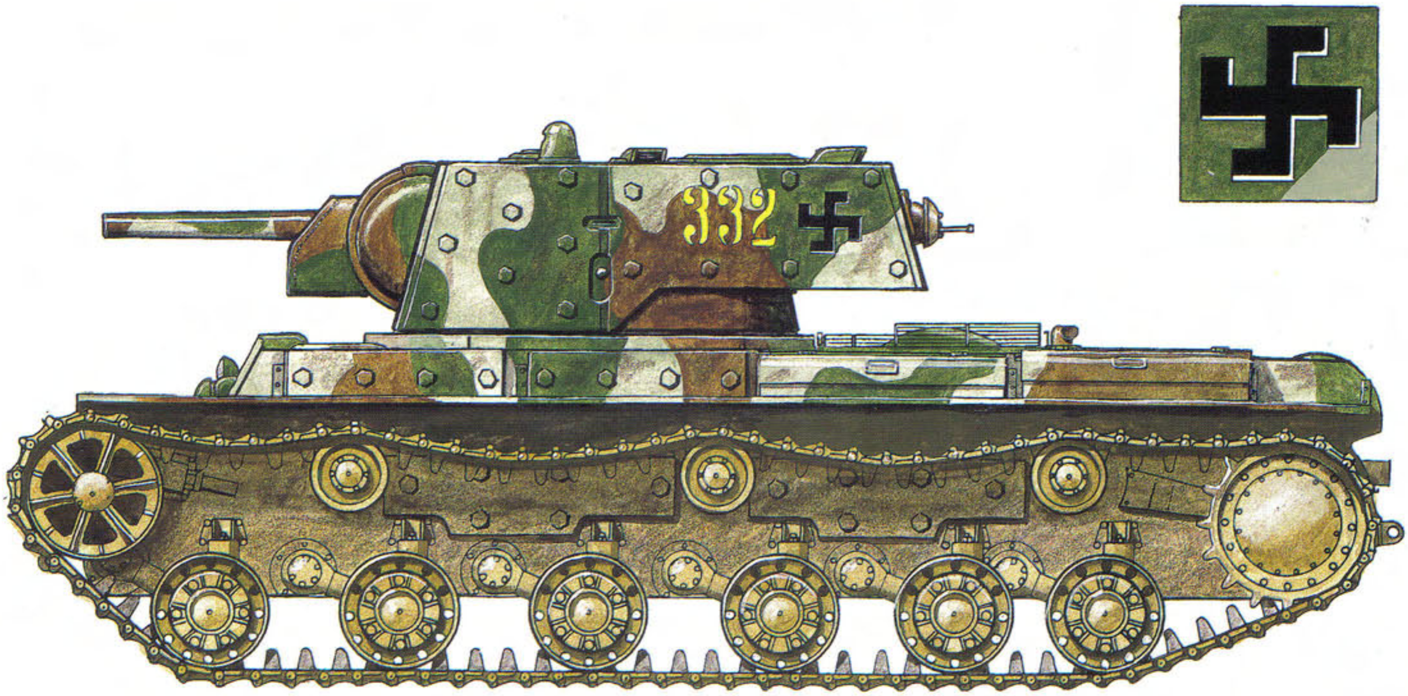
KV-1 Model 1941, Tank Brigade, Moscow Military District, summer 1942

In 1942, the Soviet government began the practice of collecting donations from Soviet groups as a means to encourage patriotic support for the war effort. Larger organizations collected enough funds to "purchase" tanks or aircraft which were then often named after them. In this case the dedication reads "Moskovskiy OSOaviakhimovets. This refers to the Moscow branch for the Special Aviation and Chemical Defense league, a civil defense organization. This is a relatively unusual example of the dedication slogan being painted on the tank in red instead of the more common white.



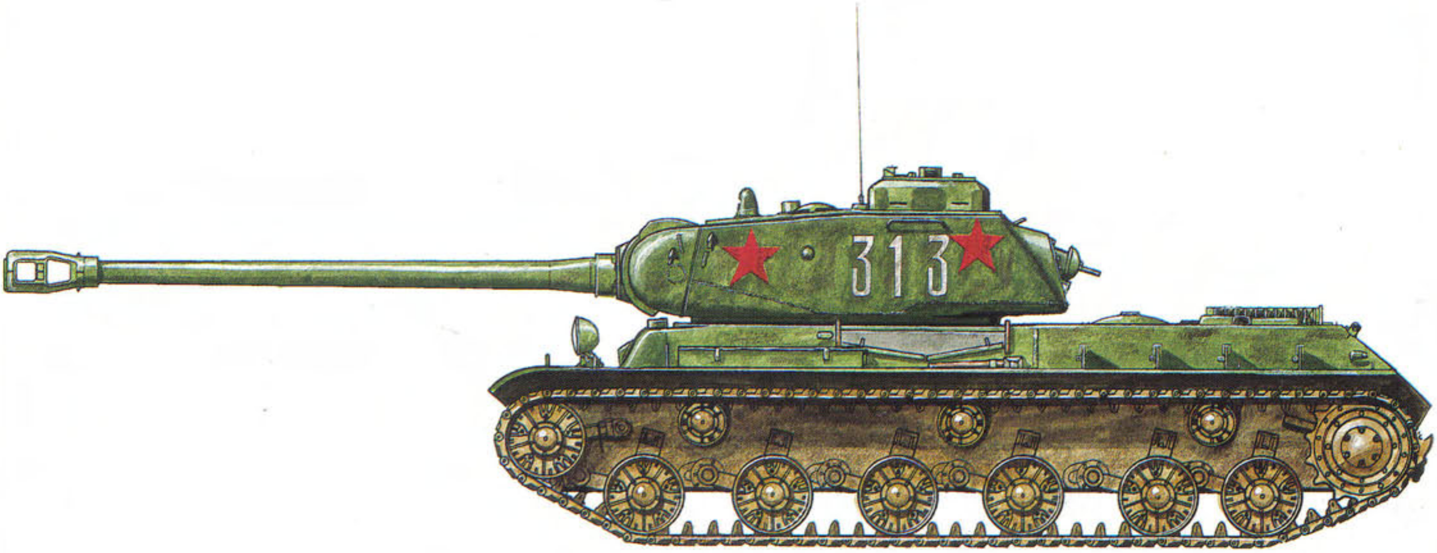
SU-152, 1824th Heavy Assault Gun Regiment, 19th Tank Corps, 4th Ukrainian Front Simferopol, Crimea, 13 April 1944

This SU-152 was part of a heavy assault gun regiment attached to the 19th Tank Corps. By this campaign, the assault gun regiment was no longer officially a part of the corps due to attrition, but this vehicle at least survived and was still in use. It is finished in a winter scheme of white over dark green. The vehicle tactical number 52 had been painted twice, probably because the original number was covered with whitewash, now washed off by the spring rains.



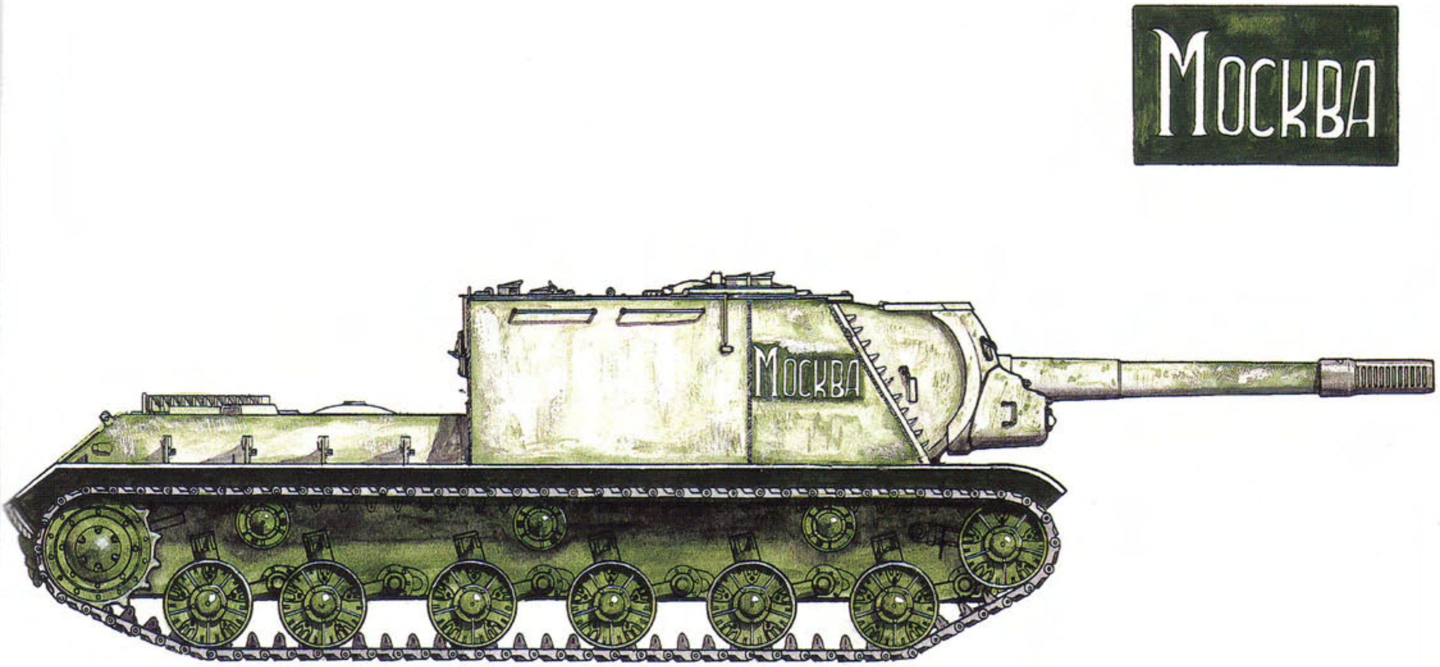
KV-1E, 3rd Company, Finnish 1st Tank Brigade (3./I/Ps.Pr.), Karelian Isthmus, July 1944

Finland captured several KV-1 tanks in 1941-42 and after repair work, placed them in their own service. Only a single "Ekranami" version of the KV- was used by the Finnish tank units, later given the serial number Ps.272-1 and still preserved in Finland to this day at the Parola museum. There were severa changes on the vehicle, such as new fenders, modified stowage, and new covers over the radiator intakes. Prior to the fierce fighting on the Karelian Isthmu in the summer of 1944, many Finnish tanks were painted in a three tone camouflage scheme of Moss-green, Earth-brown and Army-gray. The vehicle carrie the "hakaristi" national emblem on the turret sides, roof, turret rear and hull rear. A tactical number 332 was painted on the turret side, a KV-1 Model 194 cast turret in the unit was 331.



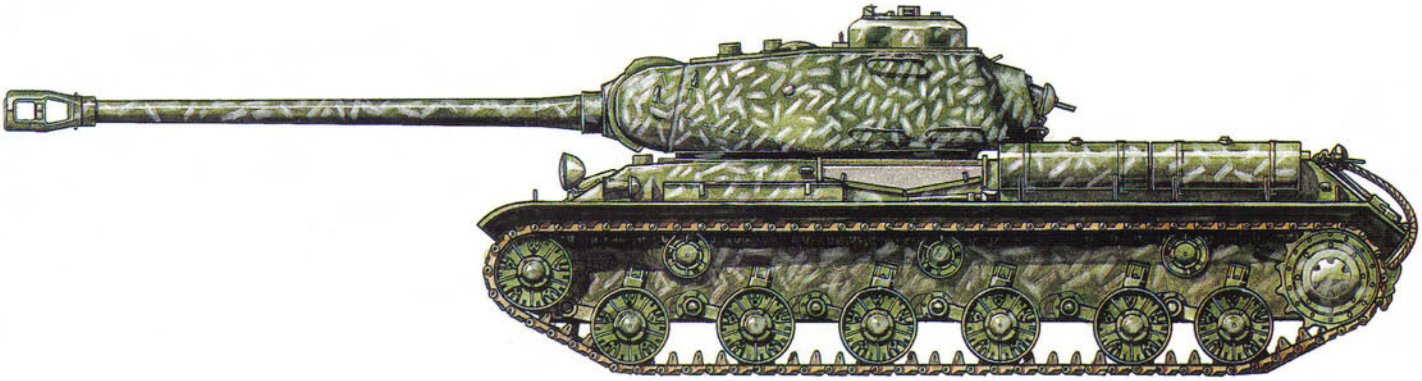
IS-2, 27th Guards Separate Heavy Tank Regiment, 21st Army, Vyborg (Viipuri), June 1944

During the June 1944 operation to knock Finland out of the war, the 21st Army was heavily supported by armor. The 27th Guards Sep. Heavy Tan Regiment, commanded by Lt. Col. Dmitrii A. Gnezdilov, was one of the first units re-equipped with the early production IS-2s in March 1944. Although th red star is always associated with the Red Army, in fact it was not a very common tactical insignia on tanks in World War 2. Here is a rare case of the re star being painted on twice, probably due to the knowledge that Finnish forces were using captured Soviet tanks. The white tactical number presumabl indicates 3rd company, 1st platoon, 3rd tank.



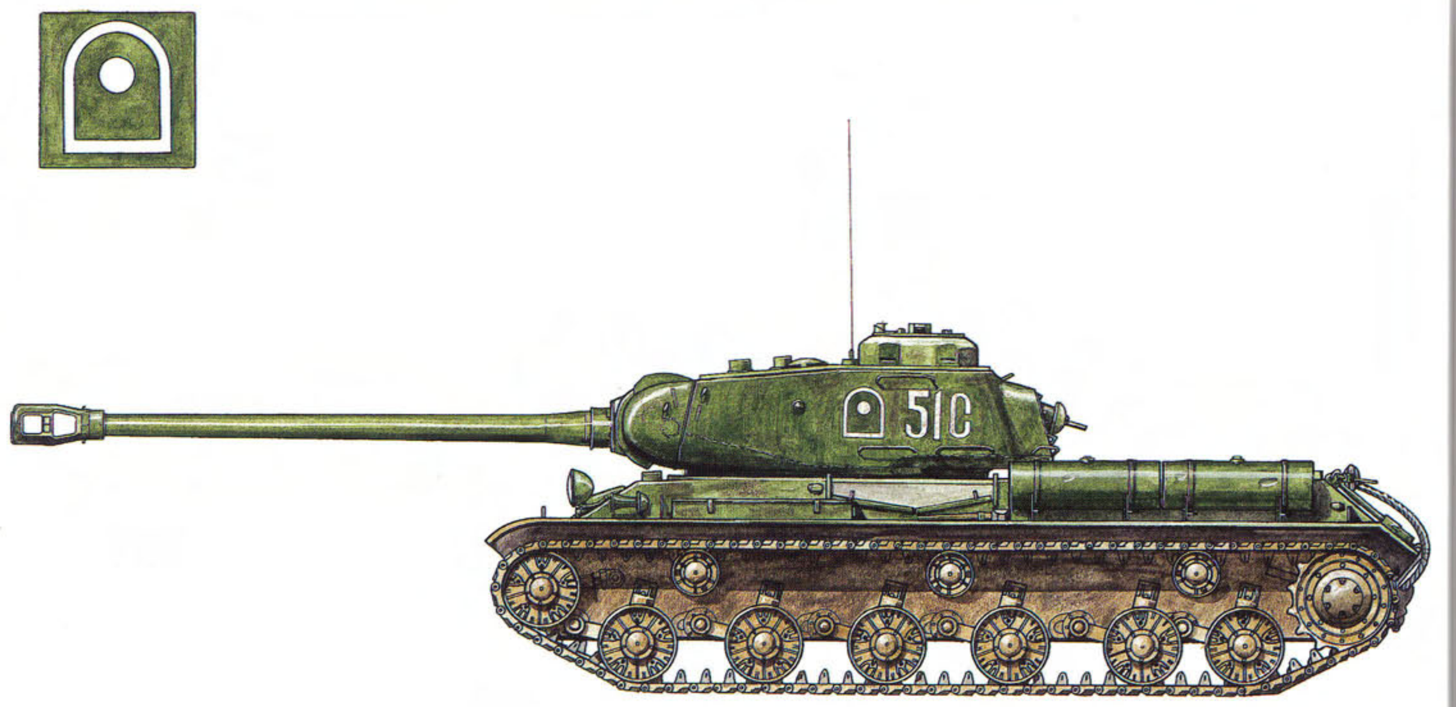
ISU-152, 1419th Heavy Self-propelled Artillery Regiment, 7th Guards Tank Corps
Czestochowa, Poland, 17 January 1945

Commanded by Maj. Vyacheslav A. Shchavslinskiy, this assault gun regiment provided fire support for the 7th Guards Tank Corps during the January 1945 Vistula-Oder offensive, the first stage of the Soviet drive on Berlin. It is painted in whitewash over the usual dark green finish, with the whitewash wearing off in many positions. The whitewash was painted around the vehicle name, Moskva (Moscow) and the tactical number has been completely overpainted.



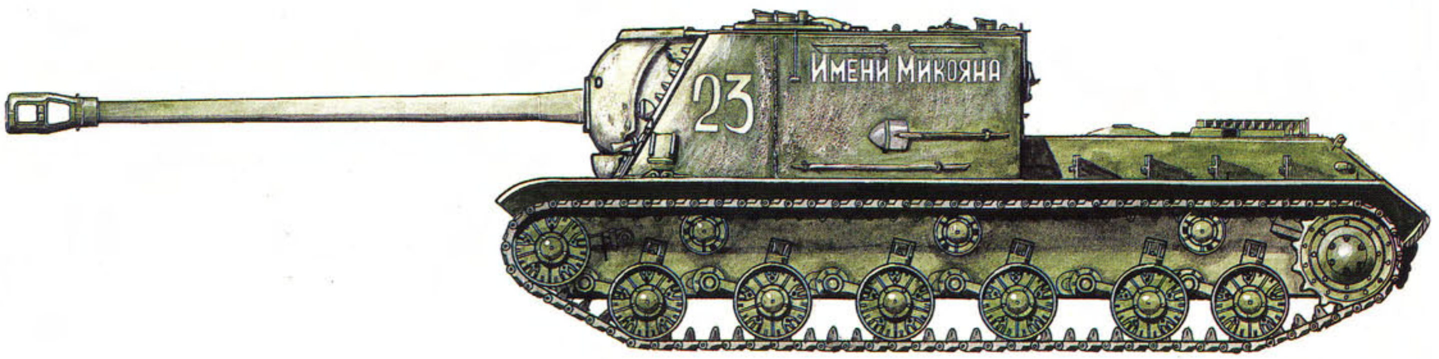
IS-2m, 29th Guards Heavy Tank Regiment, 4th Guards Tank Corps, 1st Ukrainian Front
Wislica, Poland, January 1945

Commanded by Lt.Col. Vasiliy P. Ishchenko, this regiment was one of the few equipped with KV-85 tanks in August 1943, and later re-equipped in October 1944 with new IS-2m tanks to make up for attrition. Although nominally a "separate" regiment, it served with the 4th Guards Tank Corps through the remainder of the war. At the time of the Vistula-Oder offensive, it had 19 out of an authorized 21 heavy tanks. It had a relatively unusual snow camouflage consisting of small patches of whitewash over the normal dark green finish. This regiment was involved with fighting against German King Tiger tanks in the January battles.



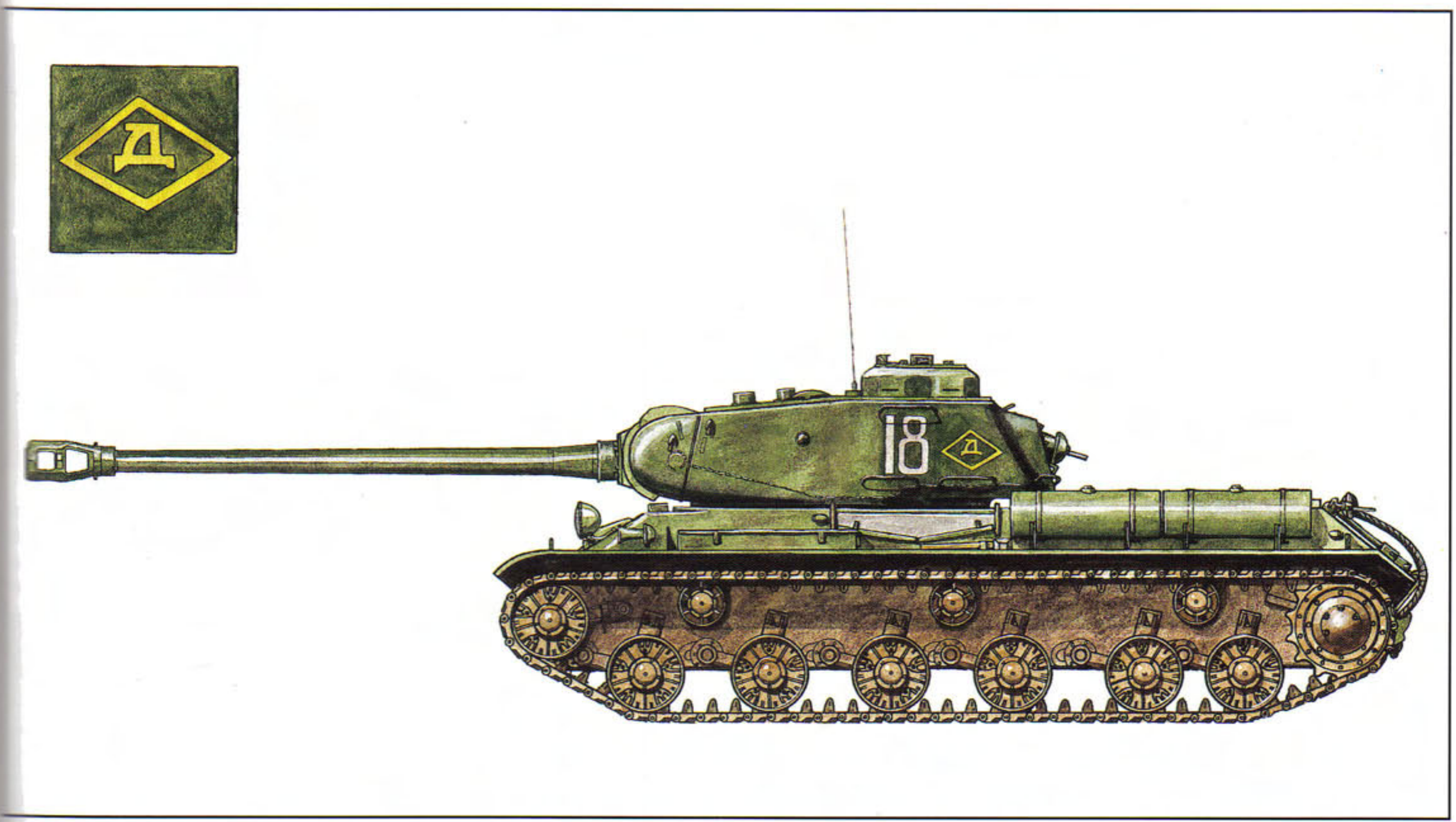
IS-2m, 62nd Guards Heavy Tank Regiment, 8th Guards Tank Corps, Gdansk (Danzig), March 1945

Commanded by Yevgeniy F. Ivanovskiy, this regiment was one of the first to receive the new IS-2 tank in May 1944. In late May 1944, the regiment was assigned to the 8th Guards Tank Corps, serving in this unit through the war. By the time of the 1944-45 operations, Soviet tank corps began to make more extensive use of tactical symbols to assist in the control of road marches. This tank shows one of the tactical symbols used by the 8th Guards Tank Corps. The tactical number is 51S; the significance of the "S" is unknown but may have identified the regiment.



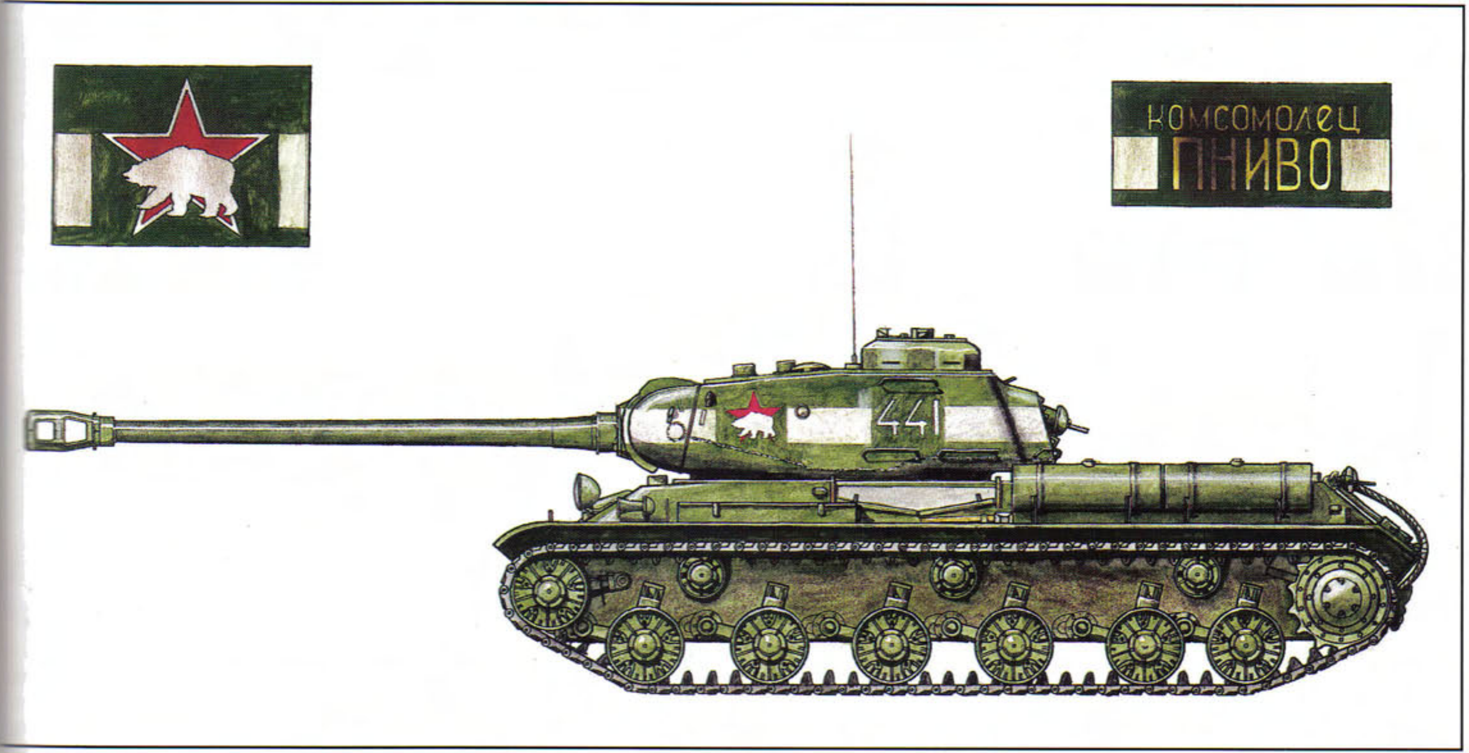
ISU-122-2, 375th Guards Heavy Self-propelled Artillery Regiment, 3rd Guards Tank Corps Gdansk (Danzig), Poland, 30 March 1945

Commanded by Col. Stepan Kharitonov, this heavy assault gun regiment was in Supreme Command reserve for the Danzig siege, and assigned to the 3rd Guards Tank Corps to help provide fire support during the city fighting near the docks. It still has remnants of its winter whitewash camouflage, especially noticeable on the superstructure front. The vehicle is marked "Imeni Mikoyana", "In honor of Mikoyan", a reference to Soviet foreign minister Anastas Mikoyan, not to his younger brother Artem, the designer of MiG fighters, who is probably better remembered today.



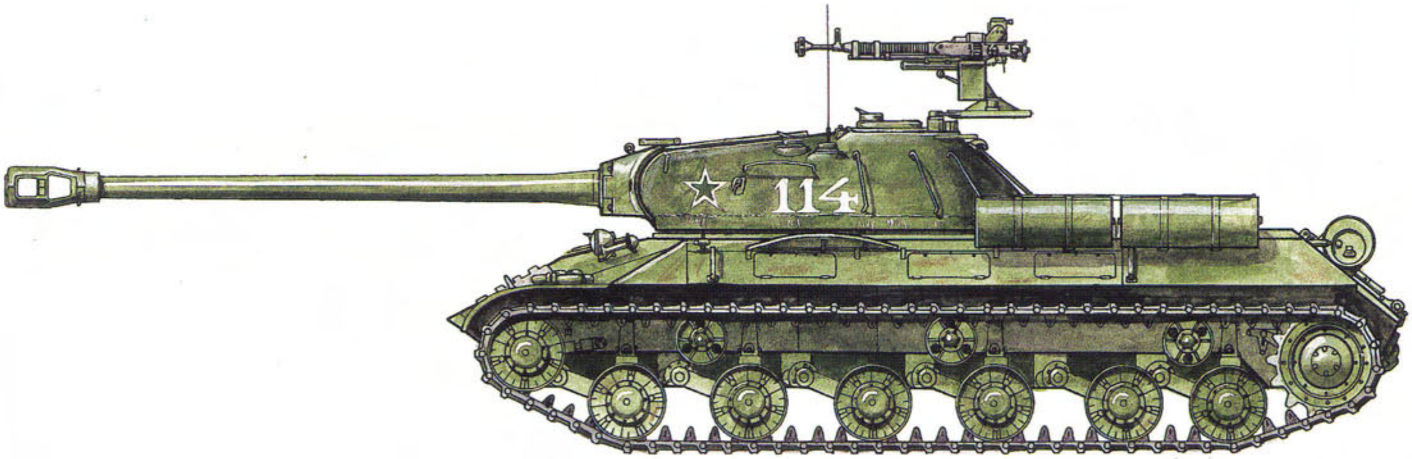
S-2m, 78th Guards Heavy Tank Regiment, 7th Mechanized Corps, 1st Guards Cavalry Mechanized Group, Jihlava Czechoslovakia, May 1945

This regiment was formed in August 1944 with new IS-2m tanks. As was typical at this time of the war, it was painted with a unit recognition symbol, in this case, a yellow Cyrillic "D" inside the usual tank rhomboid map symbol. The vehicle tactical number is 18 and suggests that the regiment simply numbered their tanks in sequence, there being 21 tanks in a heavy tank regiment.



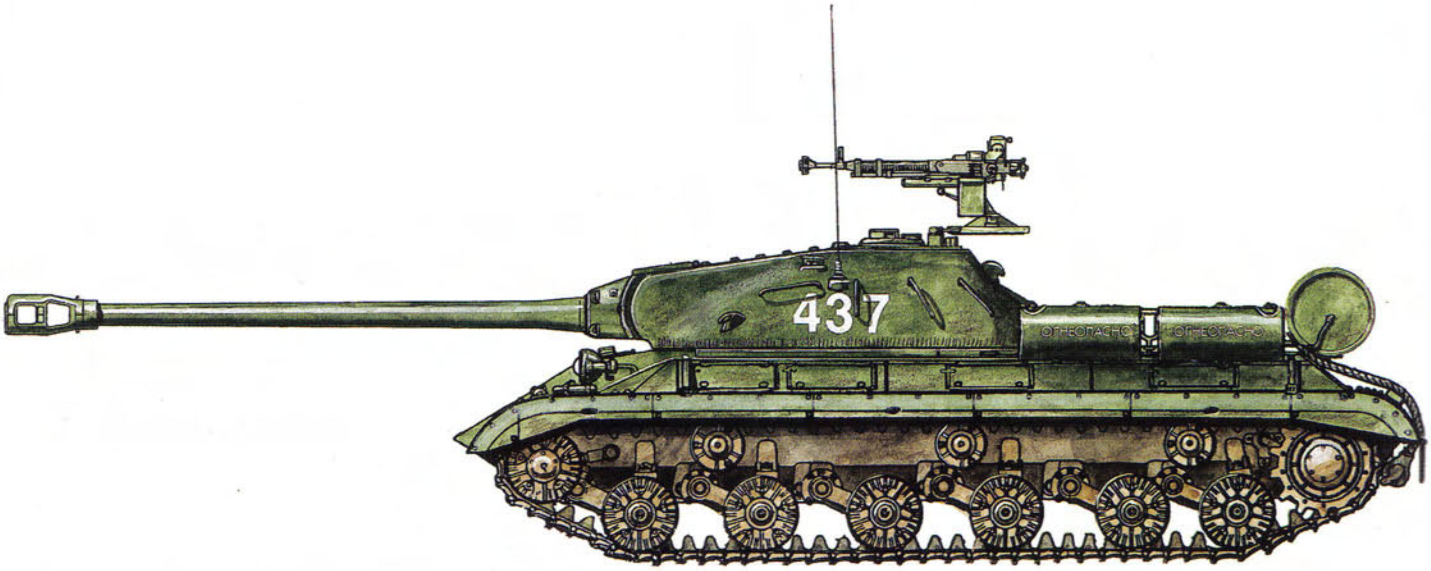
S-2m, 104th Guards Heavy Tank Regiment, 7th Guards Tank Brigade, Berlin, May 1945

After serving in the arctic north of Finland and Norway in the autumn of 1944, the brigade was re-equipped with IS-2m heavy tanks. Due to its recent arctic experiences, the brigade decided to adopt the polar bear as its insignia, as well as its nickname, the "Belie Medvedi"- the White Bears. The insignia was a white bear on a red star. It is a well known unit as it was committed to the Berlin fighting and took part in the fighting near the Reichstag. It was painted with white turret bands as an Allied recognition insignia; some tanks in the unit also had white crosses painted on the roof for the same reason. The vehicle tactical numbers identified the regiment with the first digit (104th, 105th, and 106th Heavy Tank Regts.), then the company and vehicle. Many vehicles had names painted on the turret rear to the right of the machine gun position. In the case of this vehicle, the top word is "Komsomolets" referring to the Young Communist Youth League, but the lower word is badly obscured by grime and is unreadable. This particular tank was knocked out during the fight, and after the war its turret was surreptitiously shipped to the United States for technical analysis.



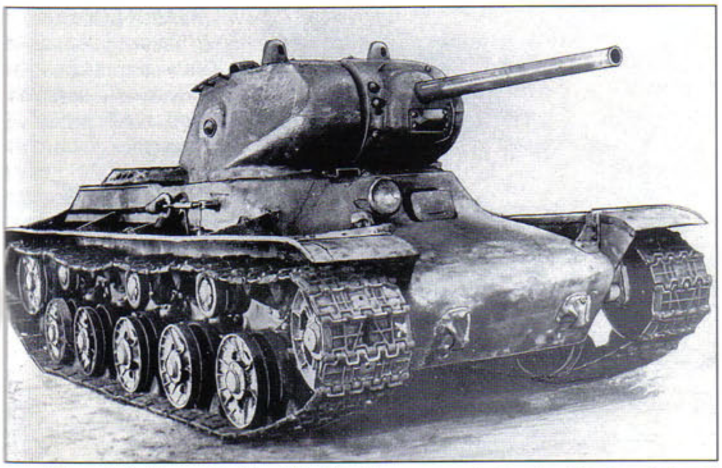
IS-3, Separate Heavy Tank Regiment, Odessa Military District, November 1948

The IS-3 was very plainly marked when in service in the 1940s. Those first displayed at Berlin in 1945 had no markings at all, nor did most of thos paraded in Moscow each year. This example which took part in a Revolution Day parade in Odessa after the war is more colorful than most with a whit outline star and a three digit tactical number.

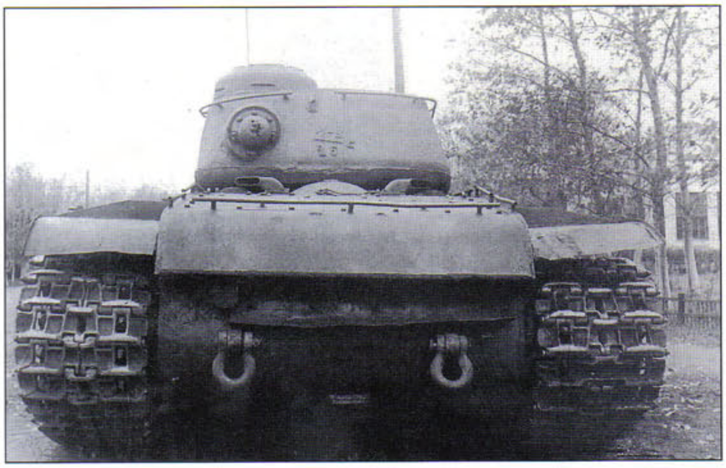


IS-3M, Separate Heavy Tank Regiment, Primorskiy Military District, Chinese Border, 1972

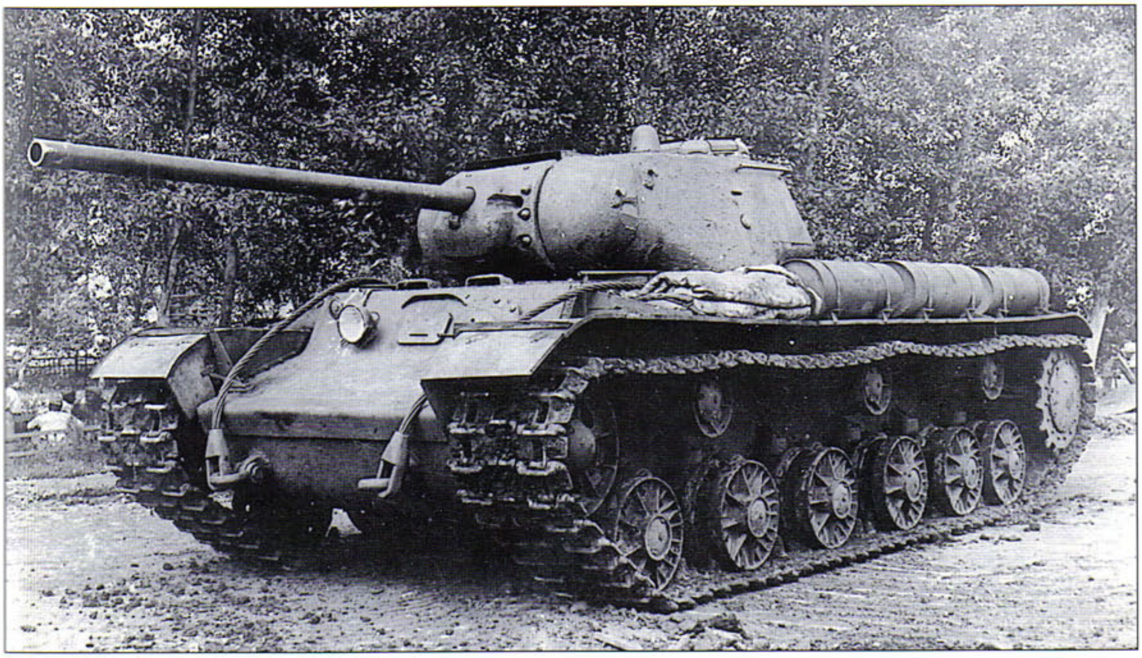
In the late 1960s, tensions between the Soviet Union and the People's Republic of China flared over border disputes in the Far East near the Ussu river. Soviet forces in the region had many older tanks, especially IS-3Ms and other heavy tanks which were considered obsolete for operations in Europ These tanks were often deployed along the Chinese frontier in specially prepared field trenches to provide fire support. Some of these IS-3M tanks were s in operation in the Soviet Far East in the early 1990s including on Sakhalin Island facing Japan. The vehicle markings are simple and consist of the usu three digit white tactical number. The fuel tanks have stenciled on the side "OGNEOPASNO" in Cyrillic which means "inflammable".



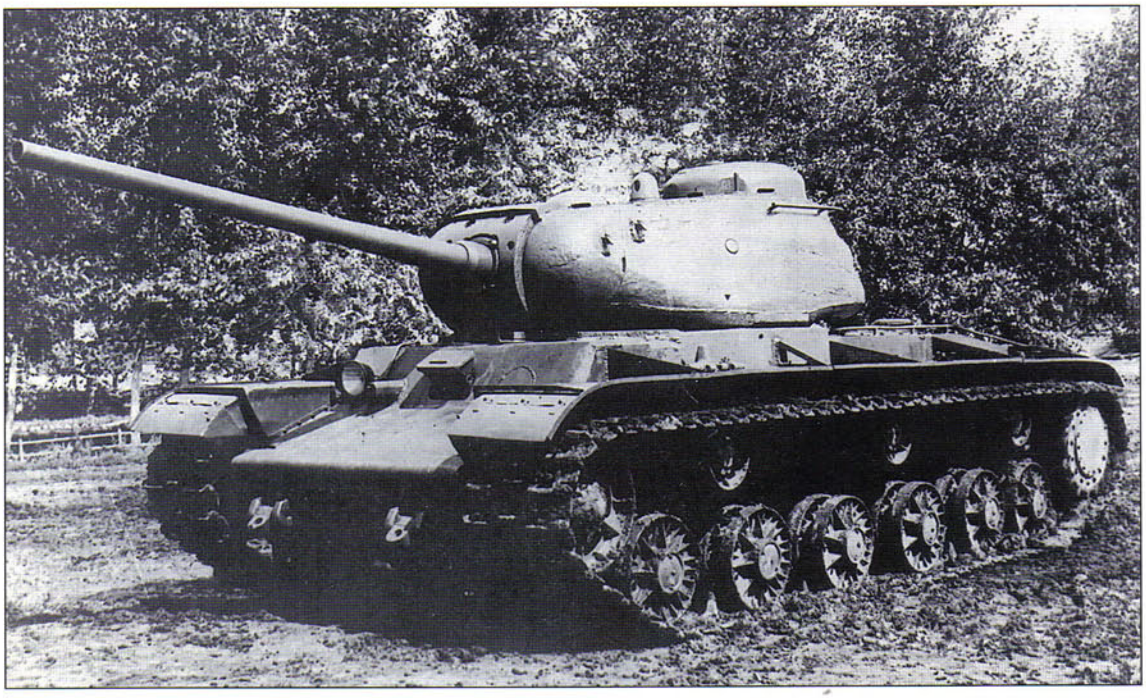
Dissatisfaction with the KV-1 led to proposals to develop a universal tank from the KV chassis, making it smaller and lighter even though still thickly armored. The KV-13 seen here was one of the results. Although the universal tank concept proved flawed, the front hull design of the KV-13 would latter reappear on the IS-2 heavy tank.



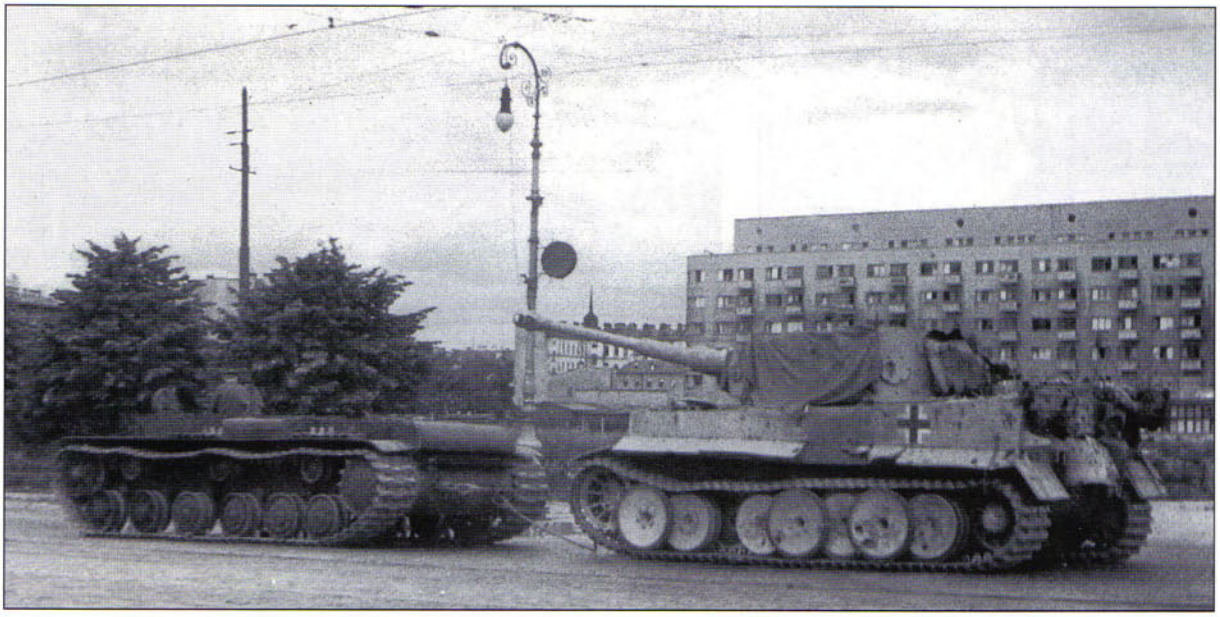
A rearview of the KV-85 prototype showing the characteristic low sloping engine deck of the KV-1S. Also notice the style of hand-holds on the turret. This style would carry over to the early production IS-1 and IS-2 tanks.



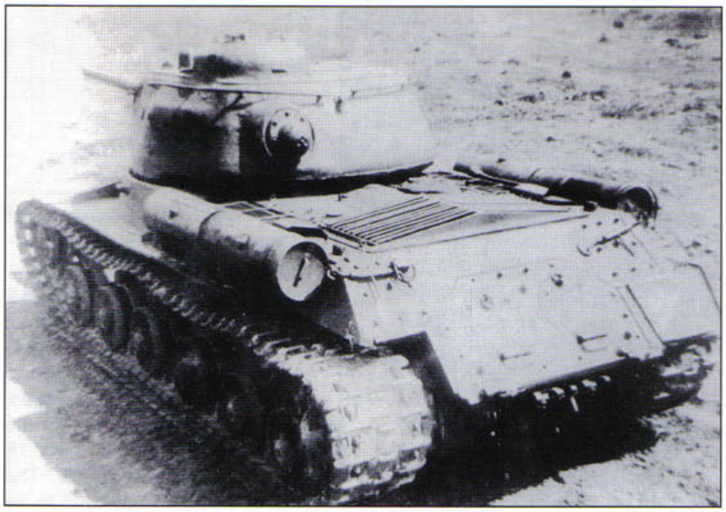
Heavy losses of KV-1S heavy tanks to the new German Tiger and Panther tanks led to an urgent program to rearm Soviet tanks with better guns. One attempt was to mount the 85mm D-5 gun in the KV-1S turret as the KV-1S-85. The turret of this tank proved to be too small to properly accommodate the gun, so this project was dropped in favor of using a new turret.



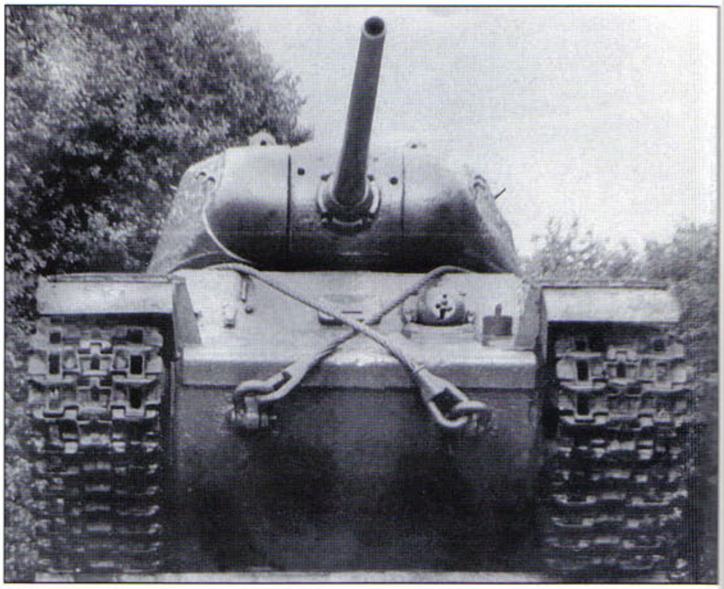
While work continued to proceed on the new IS heavy tank, a turret derived from the planned IS turret was mounted on the KV-1S hull. This proved adequate as an expedient, and a total of 130 of these KV-85 heavy tanks were produced towards the end of 1943 as a stop-gap. Notice that the hull machine gun position has been omitted on this tank. Instead, additional ammunition stowage was added.



After being retired as battle tanks, some KVs were put to use as recovery vehicles, called KV-T or KV-1T (Tyagach: tractor). Here, a KV tows a recovered German Tiger I heavy tank across Revolution Square in the Petrogradskiy section of Leningrad in 1944.

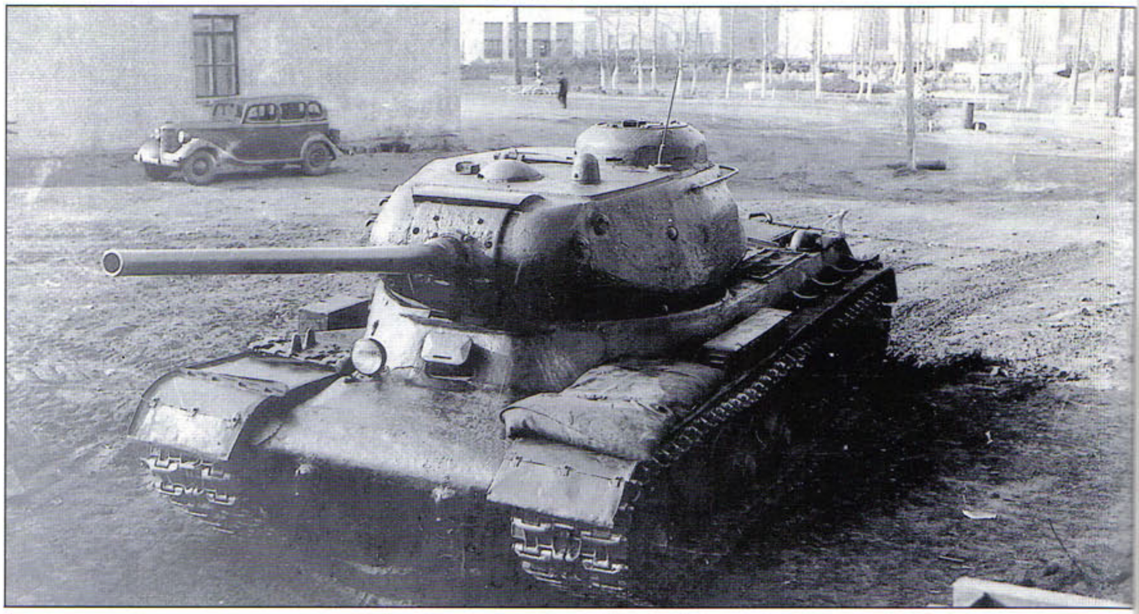


A rear view of the IS-85 prototype at Chelyabinsk in November 1944. Many of the features of this tank stayed the same with the early production IS-2 such as the lack of a rear gun travel lock.

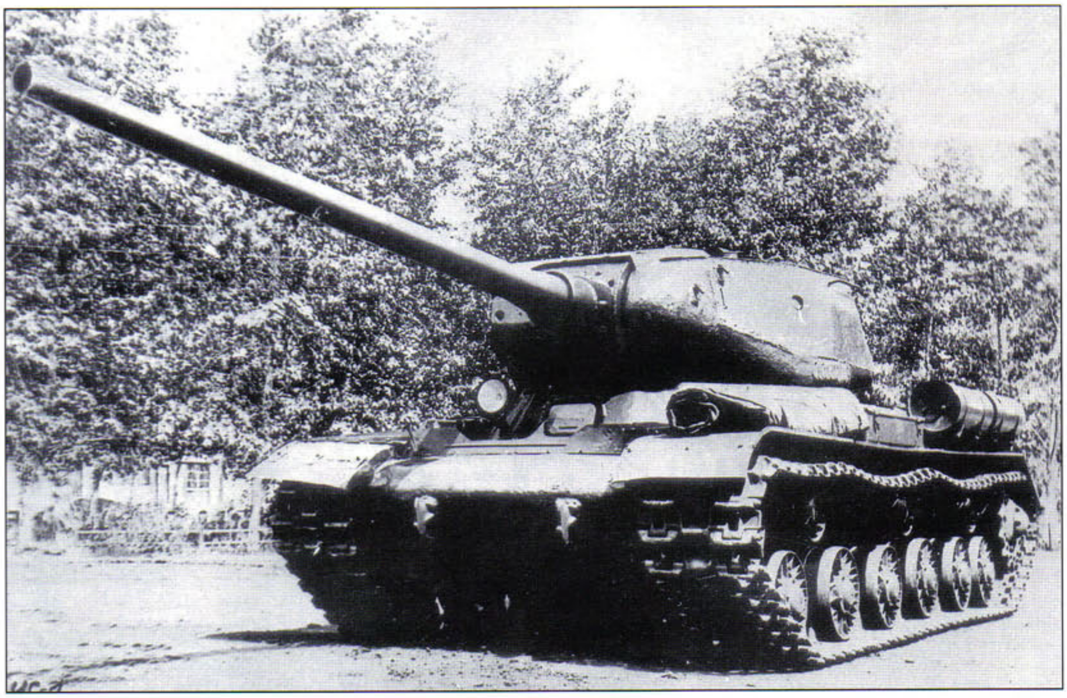


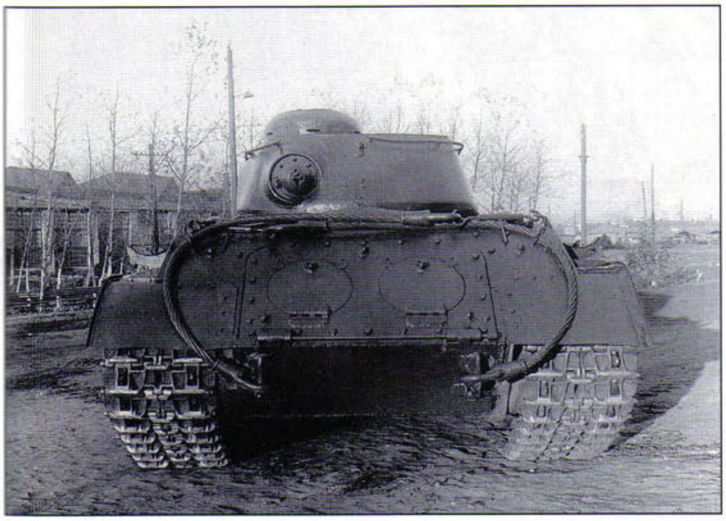
Some KV-85 heavy tanks retained the hull machine gun position as seen here. The KV-85 was used to equip a number of Guards heavy tank regiments in October-November 1943 including the 7th, 11th, 15th and 29th Guards Heavy Tank Regiments. Each regiment normally had a strength of 21 KV-85 tanks.

The shortcomings of the KV-1S hull, especially its poor armor layout, led to the design of the new Obiekt 237 heavy tank chassis in the summer of 1943 based in part on the failed KV-13 universal tank. Originally called the IS-85, this tank entered production in Chelyabinsk in December 1943. By the time they were complete, it was decided that the 85mm gun was too small. As a result, all were rebuilt as IS-2 tanks with 122mm guns before being issued to the troops. The initial IS-85 prototype was armed with the S-31 85mm gun, but the series production IS-1 was armed with the D5-T85 gun as seen here which can be distinguished by its different mantlet.

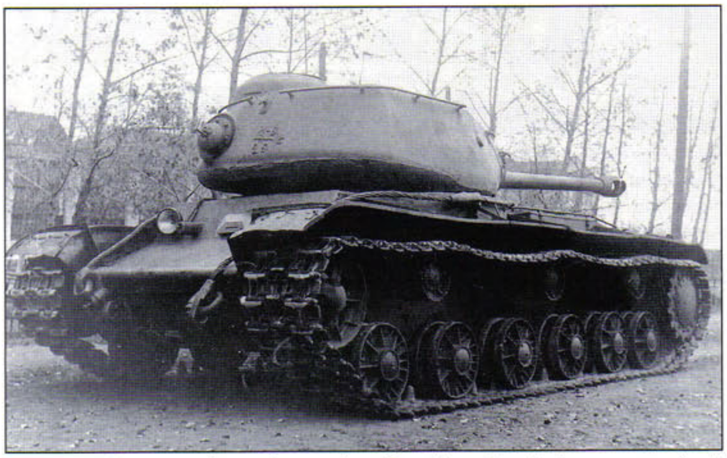


Another alternative armament considered for the IS tanks was the S-35 100mm gun. Although an excellent anti-tank weapon, neither the gun nor its ammunition were available in the Soviet logistics network, and the Red Army desired a weapon with more potent high explosive ammunition. As a result, only prototypes of the IS-100 was built as seen here.

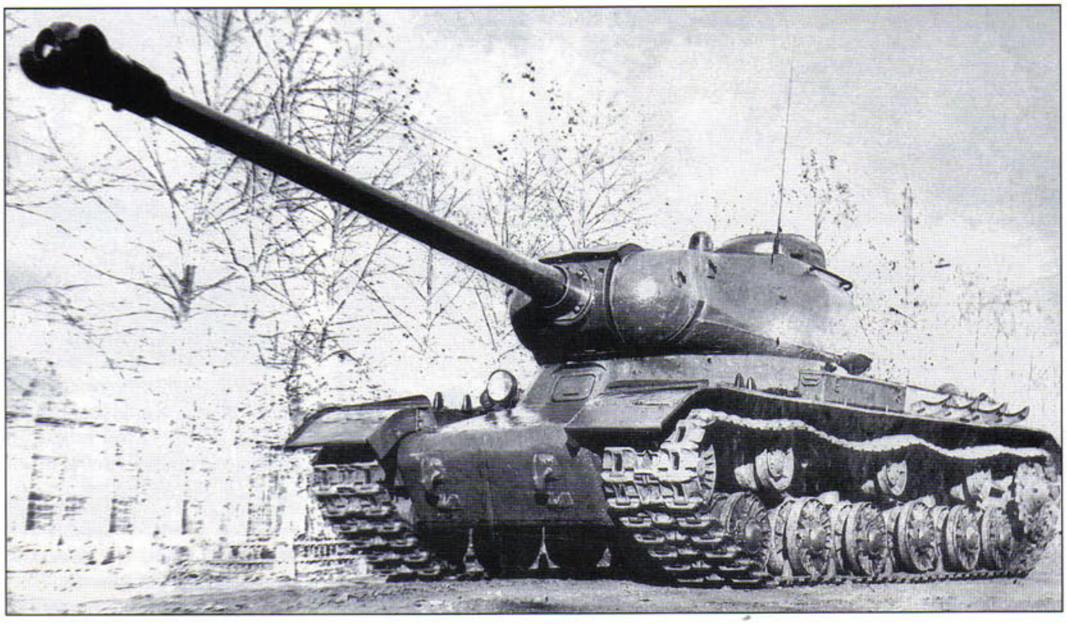




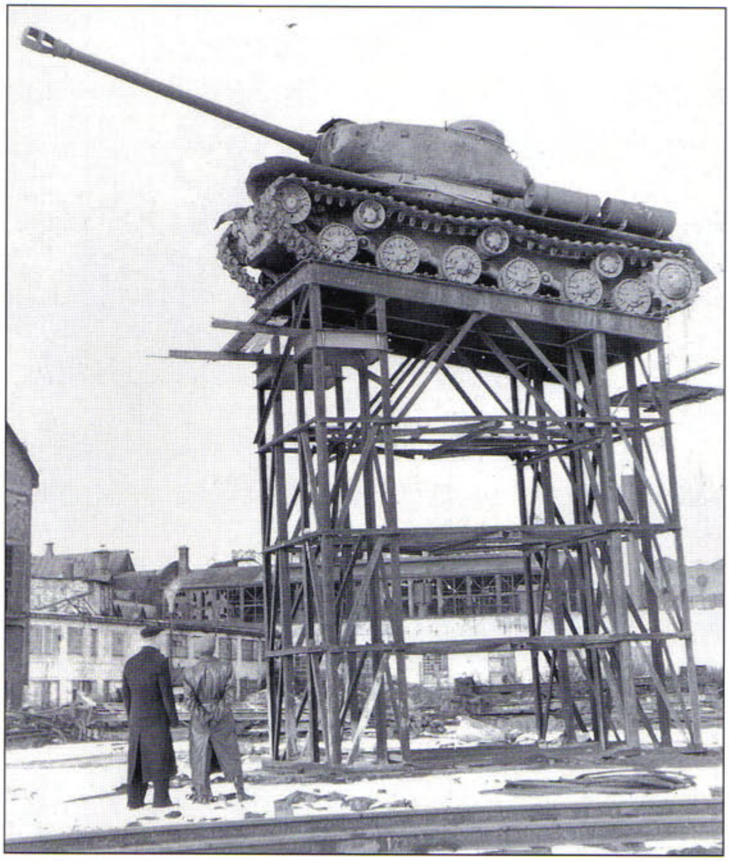
The Obiekt 240 was the first prototype of the IS series fitted with a 122mm D-25T gun. This version entered production in January 1944 as the IS-2. This view of the prototype shows some of the features standard to early production vehicles including the KV-85 style of turret hand-holds, and the lack of a rear gun travel lock.



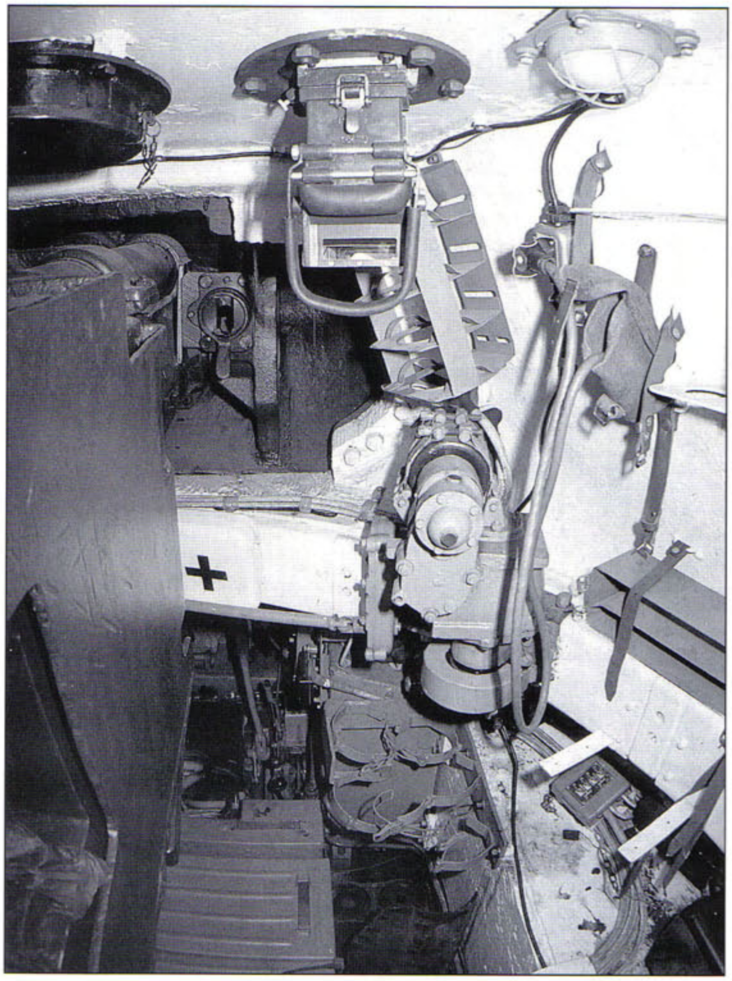
As a low-cost alternative to the IS series, the designers examined mounting the IS-2 turret with 122mm gun on the KV-1S hull. However, it was not deemed acceptable, and only a prototype was built as seen here.

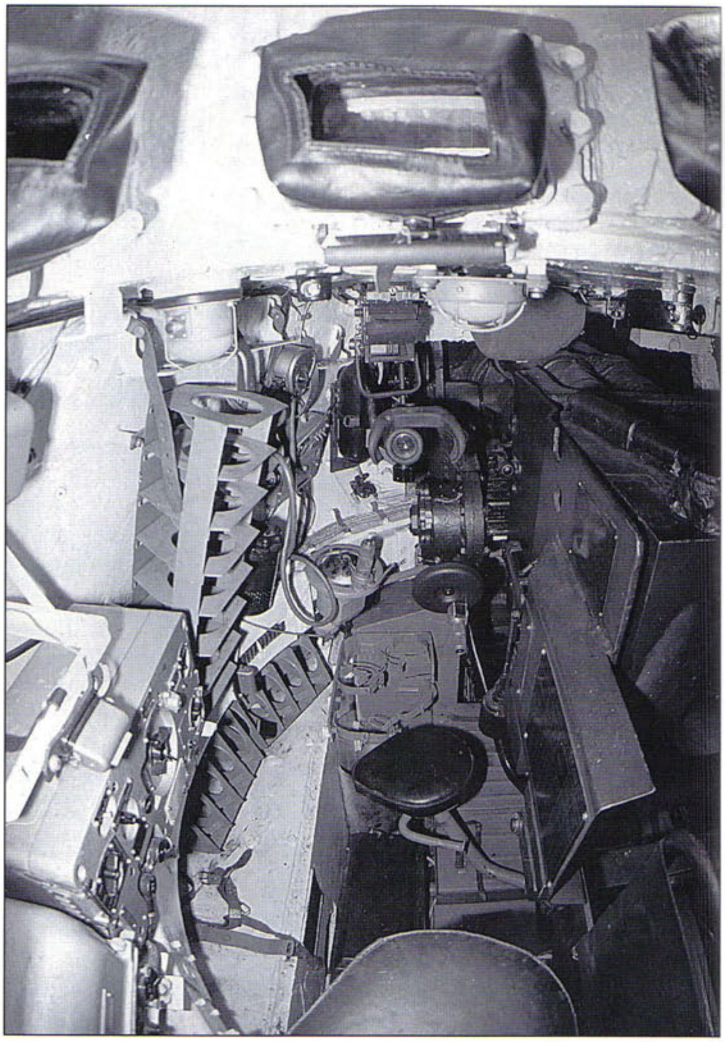


The original Obiekt 240 prototype of the IS-2 used a gun with a single-baffle hammer-head muzzle brake as seen here. The production vehicles however used the more familiar double baffle muzzle brake.

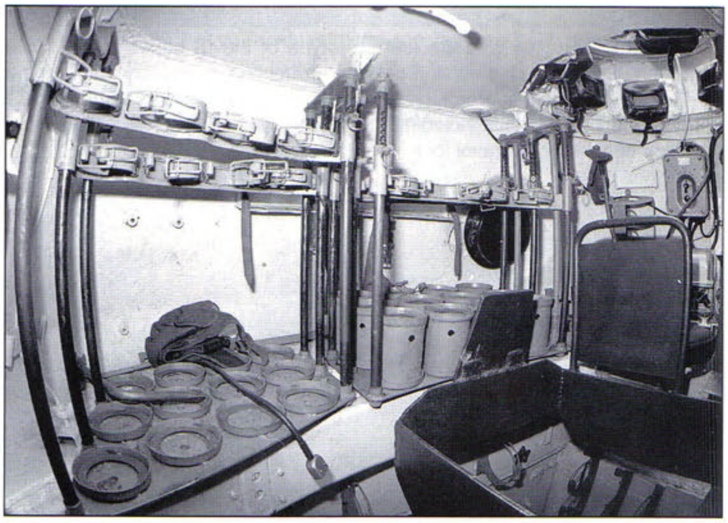


The first prototype of the IS-2 was shown to Stalin in October 1943. It was later shipped to the Leningrad Kirov Plant (LZK) after Leningrad was liberated and installed on a plinth to commemorate the plant's long association with heavy tank design. This shows the prototype on a scaffold in 1946 prior to the completion of the stone plinth underneath.



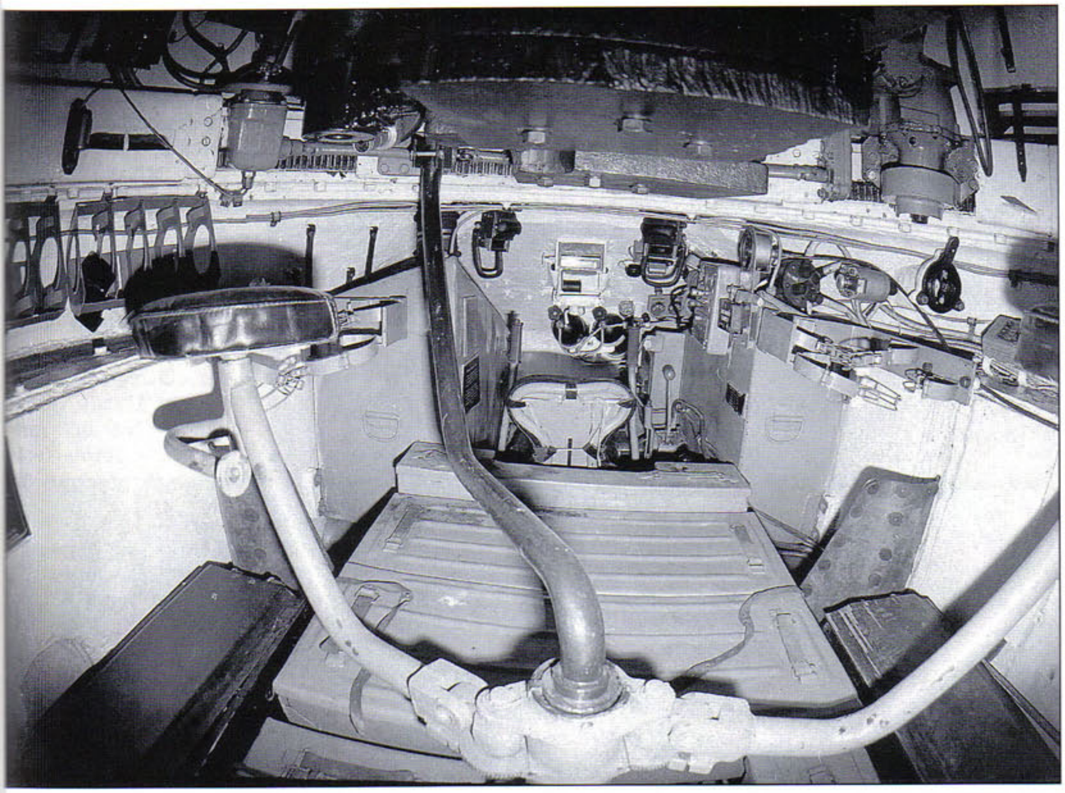


The IS-2 enjoyed a substantially better interior design than the KV series with a much more practical turret layout. This view of an IS-2M currently preserved at Duxford shows a view from the commander's station on the left hand side forward towards the driver's station. In the IS-2, the radio was near the commander rather than in the hull to facilitate communication.

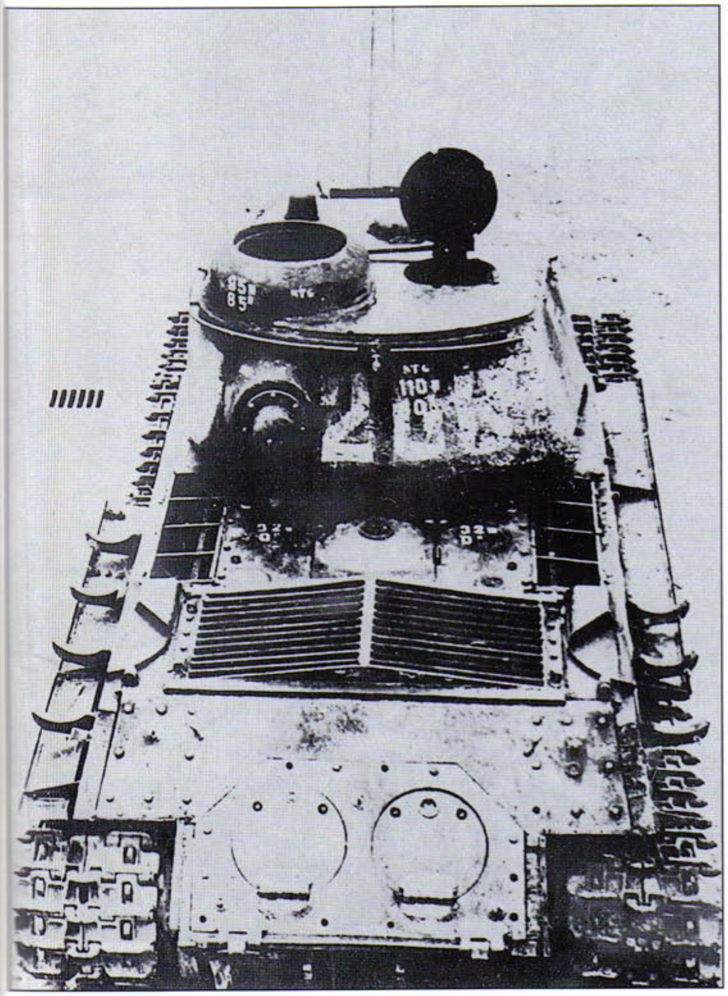


The ready ammunition for the IS-2 was kept in the rear right hand side of the turret bustle behind the loader. The 122mm gun used split case ammunition with the propellant cases to the outside of the racks and the projectiles towards in the inside.

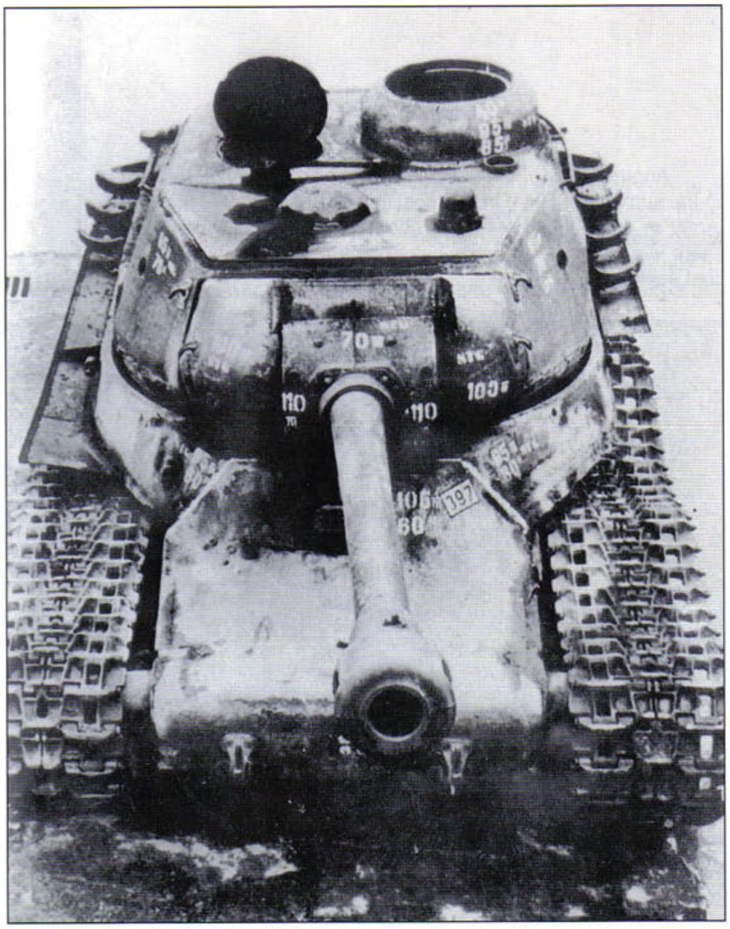
The loader's station in the IS-2 is very austere. Aside from the periscopic sight, the device in the front is the electric turret motor drive, controlled by the gunner. The reserve ammunition for the gun was kept in metal containers on the floor.



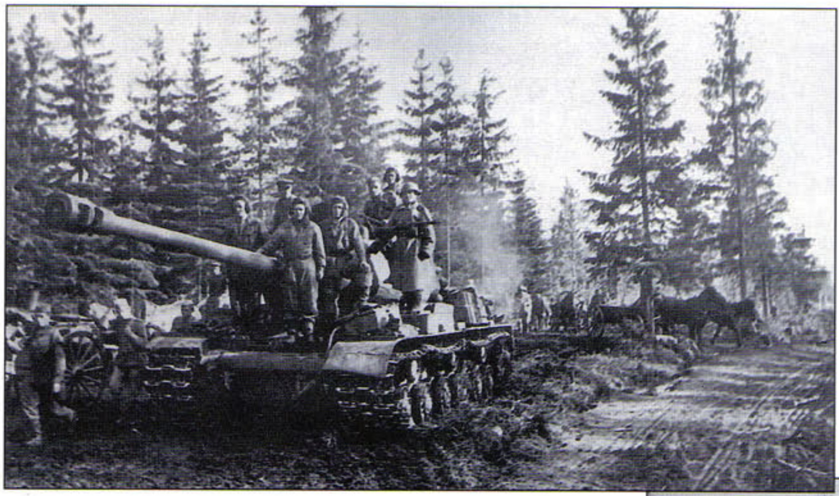
A view from below the gun breech towards the driver's station. The piping in the center of the hull is for the gunner's seat on the left, the turret electrical conduit in the center and the loader's seat on the right. The driver's compartment is in the center of the vehicle and is flanked by two fuel tanks. The floor is made up of metal ammunition lockers for the reserve ammunition supply. The IS-2 carried only 28 rounds of ammunition, 12 in the ready reserve, and the remainder in the hull.



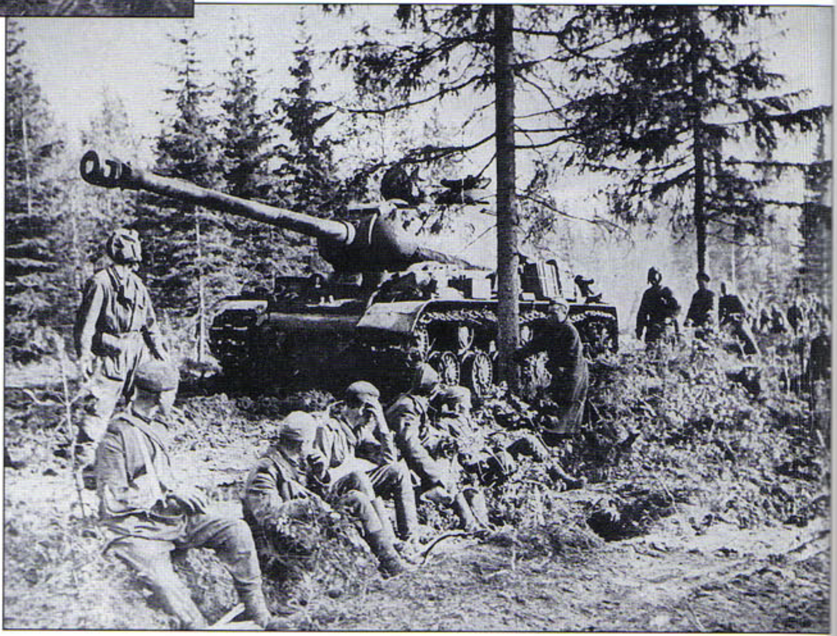
A rear view of the early IS-2 captured by the Germans. There are several interesting details evident in this view such as the lack of a rear travel lock, and the KV-85 style of wrap-around hand-holds on the turret.



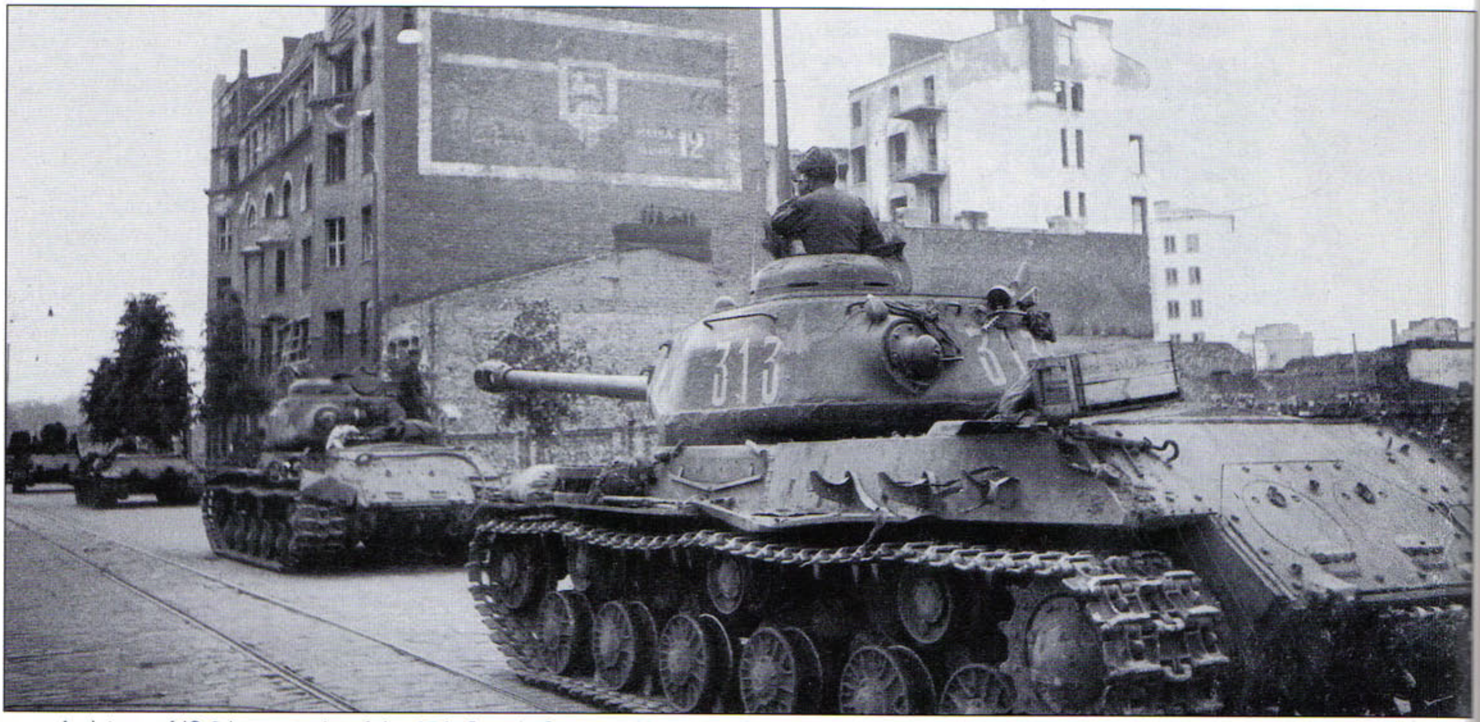
The first Soviet Guards heavy tank regiments began to re-equip with the IS-2 tank in February-March 1944. The IS-2 tank was first committed to combat in April 1944 with the 11th Guards Heavy Tank regiment, 6th Guards Tank Corps during the fighting in the Korsun-Shevchenkovskiy operation in Ukraine. This was the first IS-2 recovered from the battlefield by the Germans, possibly from this unit or the regiment involved in the fighting near Tirgu Frumos in Romania in May. The numbers stenciled on the armor are the armor thickness above, with the angle of the plate, where applicable, below. (US Army Ordnance Museum, APG)



A Soviet IS-2 heavy tank regiment moves to the front in the summer of 1944. The primary role of the IS-2 was not tank fighting, but rather in assisting the Red Army in securing breakthroughs in German positions. Although its 122mm gun was not ideal for tank fighting, it was a fearsome direct fire weapon, with a 25 kg high explosive projectile.

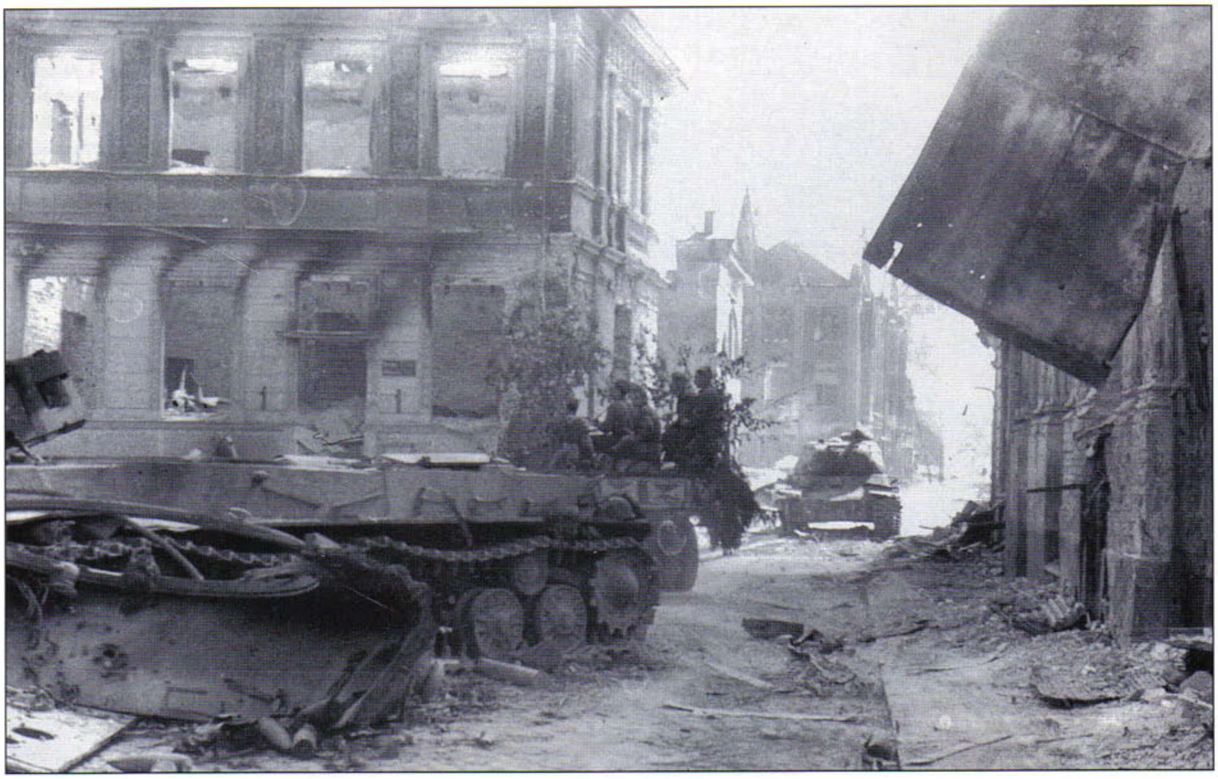


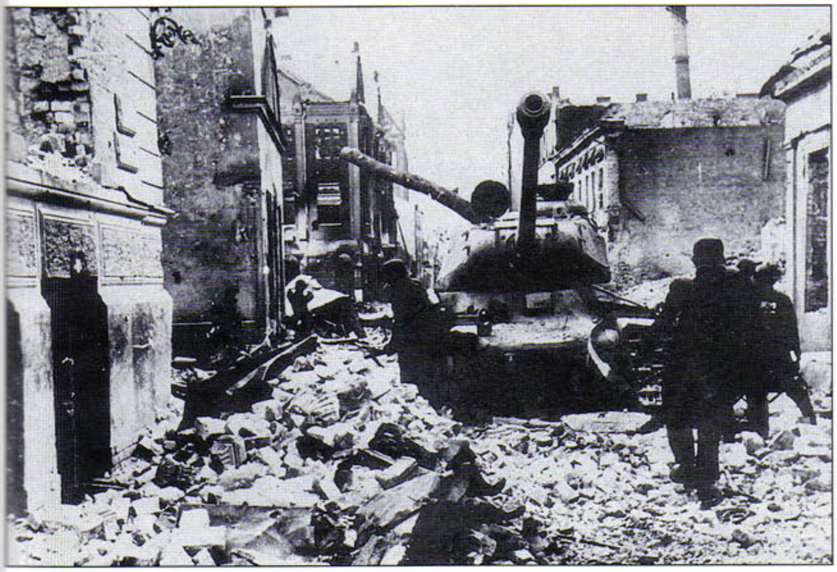
Another view of the same column of IS-2s moving forward in the summer of 1944. In the most impressive victory of the Red Army in June-July 1944, Operation Bagration in Byelorussia, there were only two Guards heavy tank regiments available in that sector.



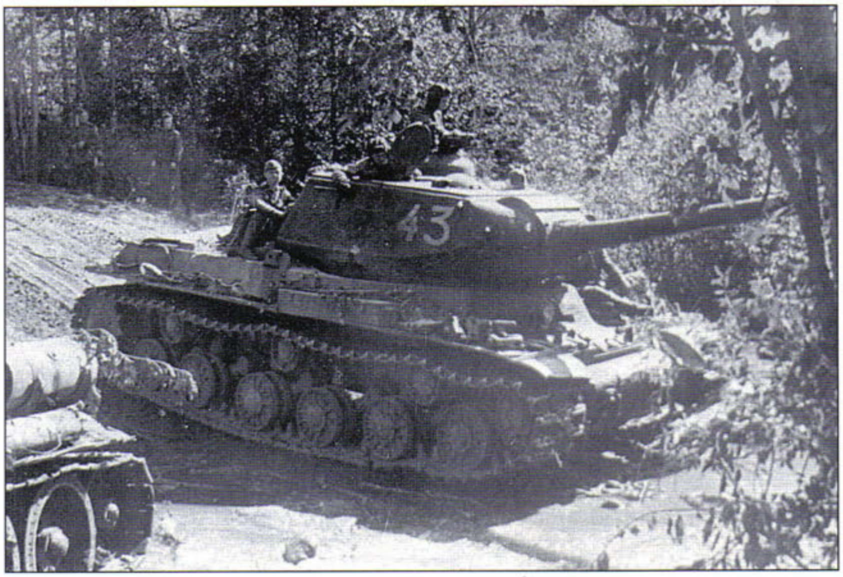
A platoon of IS-2 heavy tanks of the 27th Guards Separate Heavy Tank Regiment enter Viipuri (Vyborg) during the opening phase of the campaign against Finland on the Karelian isthmus on 20 June 1944. This was the only IS-2 unit used in this phase of the offensive. This regiment received its IS-2 heavy tanks starting in March 1944 and they are still the early production type lacking the gun travel lock. However, the production details had already changed and the turret is fitted with the later individual hand-holds instead of the KV-85 style of wrap-around hand-holds. This tank is shown in one of the color plates.

A pair of IS-2 tanks lay destroyed in the rubble of Elgava, Latvia, during the fighting for the city in late July 1944 by the units of the 1st Baltic Front. This attack was especially heavily supported by IS-2 units including the 3rd and 15th Guards Heavy Tank Regiments with the 51st Army, and the 64th Separate Guards Heavy Tank Regiment with the 3rd Guards Mechanized Corps. (Dorenskiy)





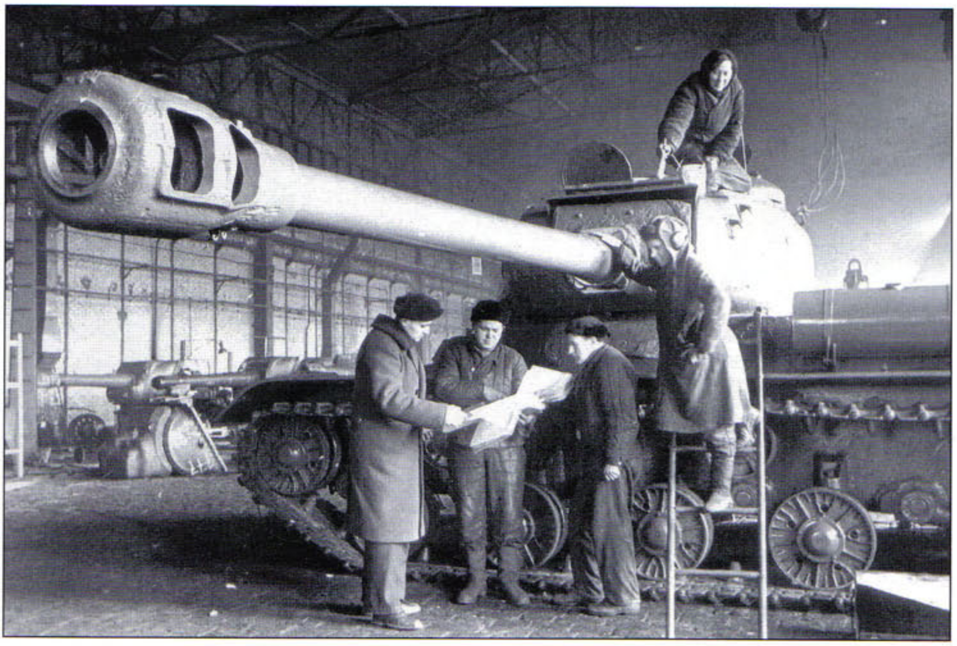
German troops inspect a knocked out IS-2 in the streets of a Baltic city during the fierce fighting there by the 1st Baltic Front in the late summer of 1944. German resistance in this sector was especially stiff, not only because of the favorable terrain for the defenders, but also because it blocked the Soviet approach to the nearest German soil in East Prussia.



An IS-2 of the 13th Guards Heavy Tank Regiment, 10th Guards Army of the 2nd Baltic Front on the approaches to Riga in September 1944.

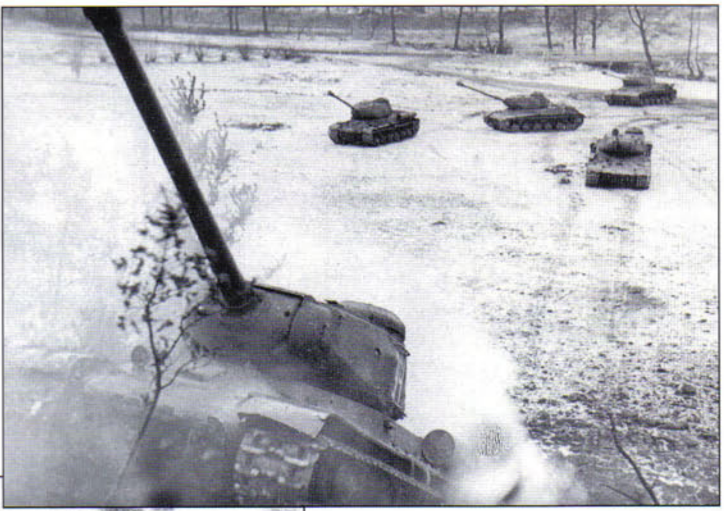
An IS-2 moves forward during fighting along the Baltic coast in the autumn of 1944.

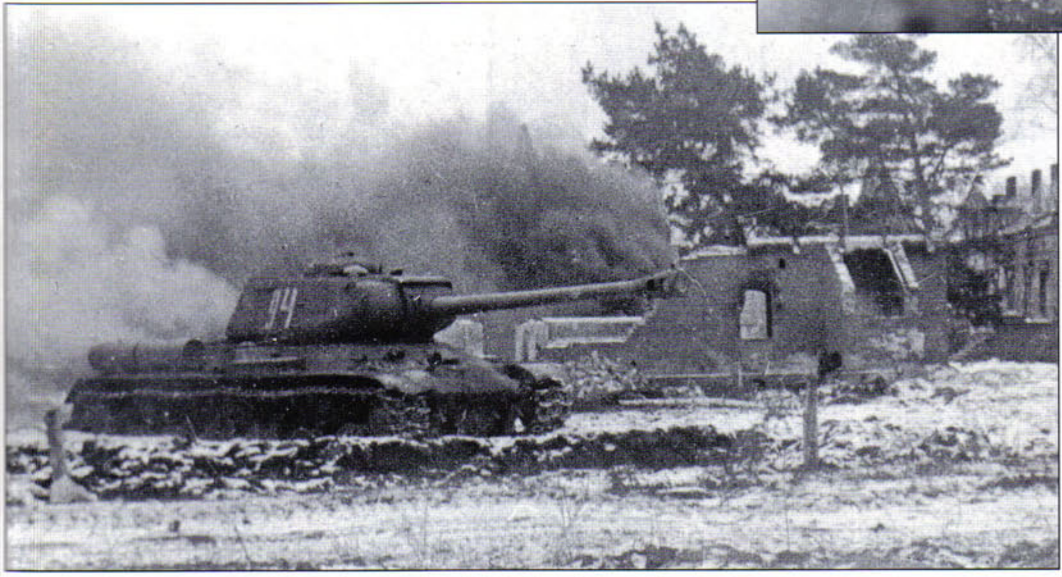
A pair of IS-2s of the 30th Guards Tank Regiment supporting the 2nd Guards Mechanized Corps during the 2nd Ukrainian Front's assault towards Budapest in December 1944. This was the only Guards heavy tank regiment in operation with the front in early December 1944.



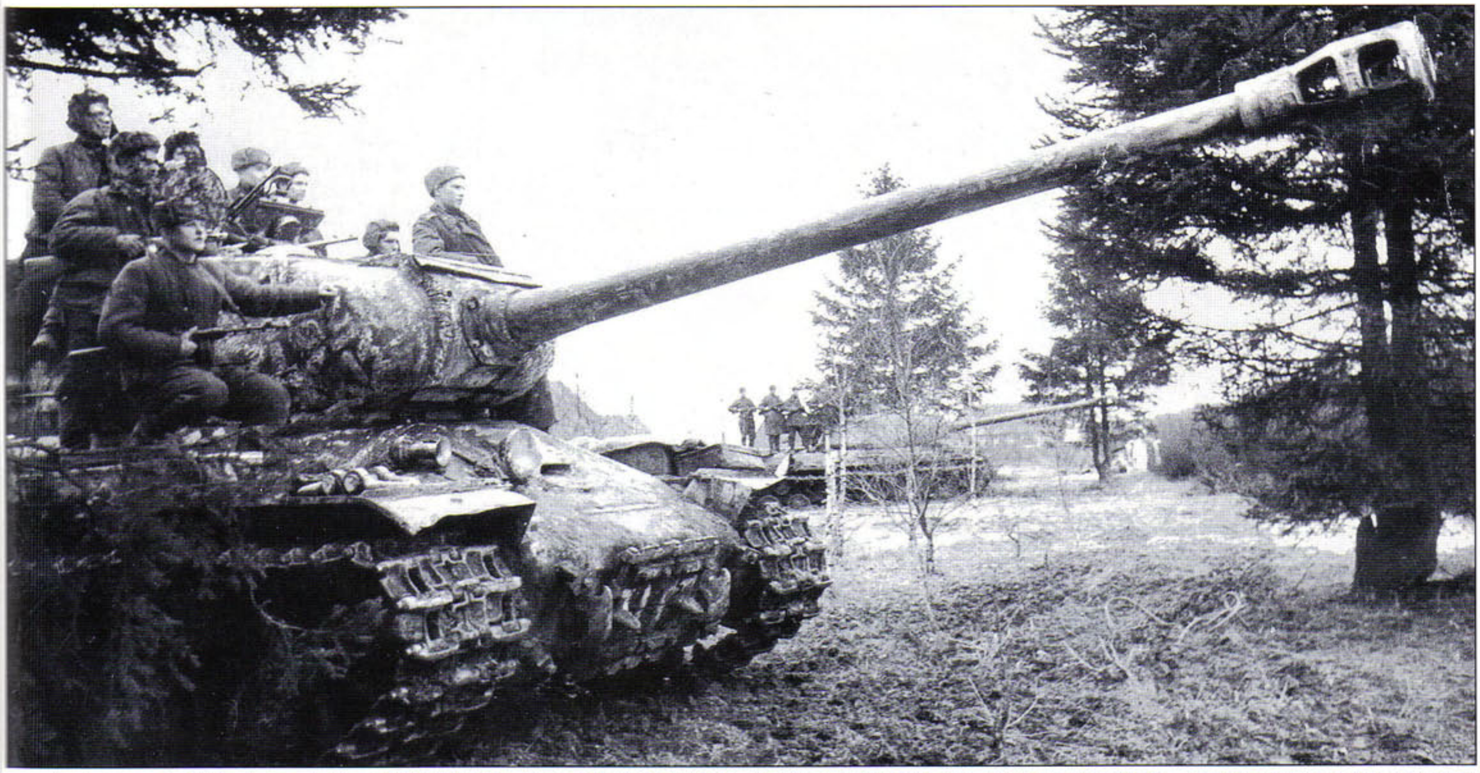
By August 1944, production at Chelyabinsk was beginning to shift over to the improved IS-2m heavy tank. This used a new front hull casting and a wider gun mantlet. Here a tank undergoes final inspection and painting in early 1945. In the background are gun assemblies for the ISU-152 heavy assault gun.

New IS-2m heavy tanks began to appear in large quantities during the massive January 1945 offensives. These are tanks of a Guards heavy tank regiment with the 3rd Byelorussian Front in East Prussia. There were at least four IS-2 regiments with this front, the 75th, 81st and 82nd Heavy Tank Regiments supporting units of the 5th Army and the 77th Guards Heavy Tank Regiment supporting the 28th Army.

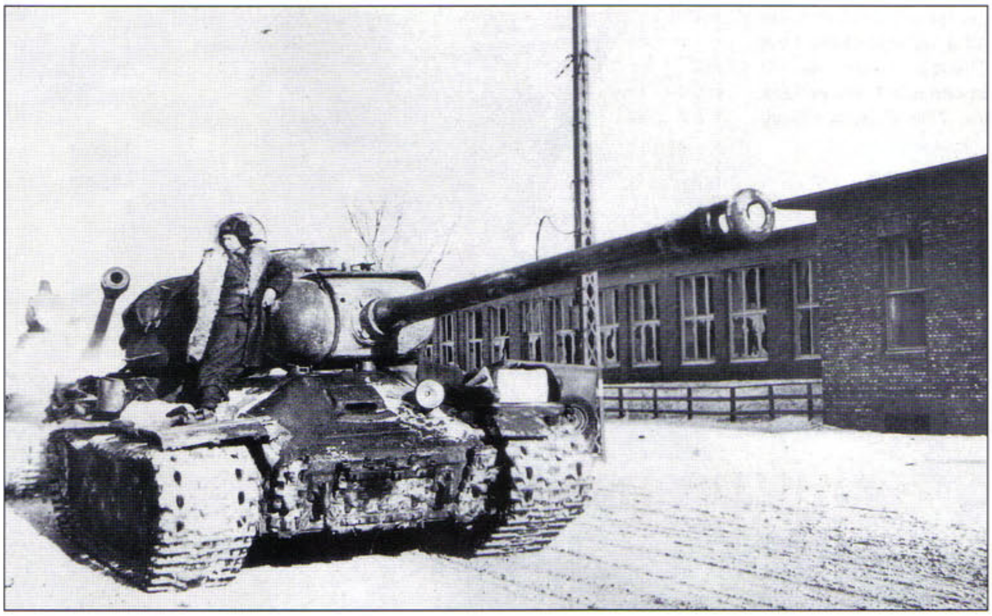




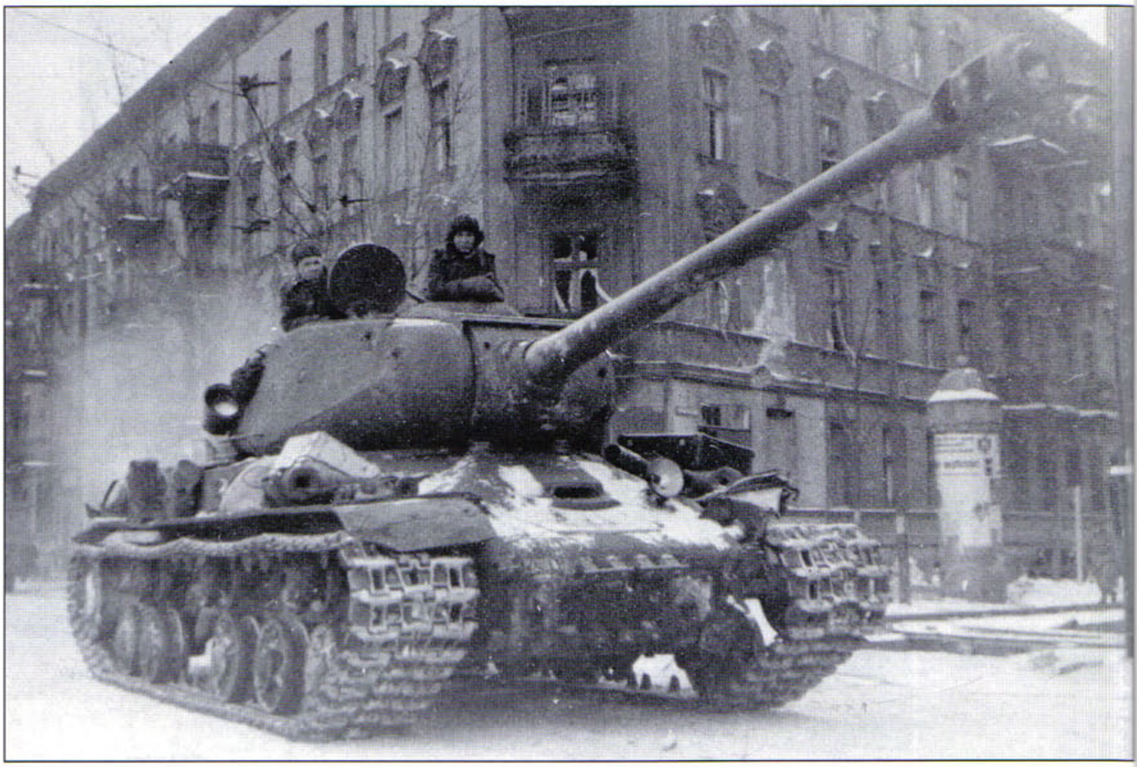
A new IS-2m of a Guards heavy tank regiment in East Prussia in January 1945. By this time in the war, the German infantry were ill-prepared to deal with such tanks as their standard 75mm PaK 40 anti-tank gun were nearly useless in frontal engagements with the IS-2.



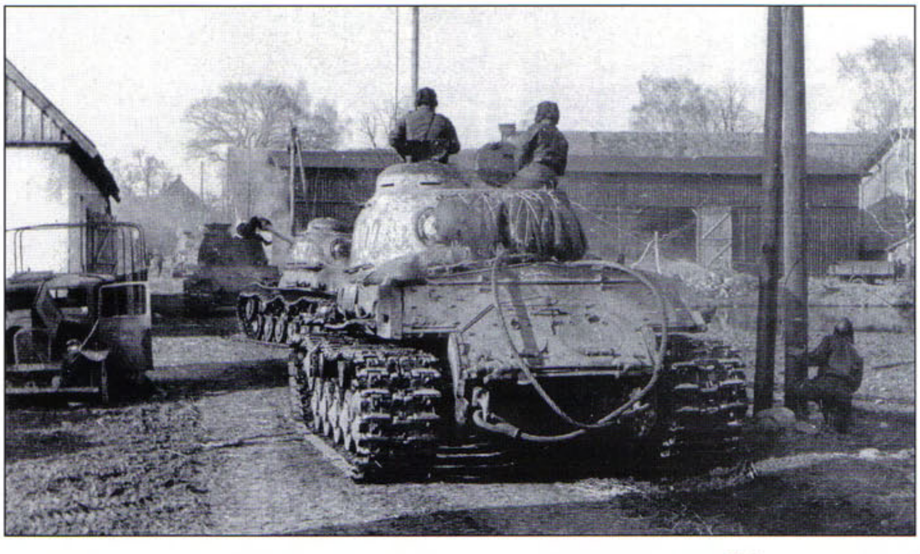
A platoon of IS-2m heavy tanks of 29th Guards Heavy Tank Regiment, 4th Guards Tank Corps, 1st Ukrainian Front, prepare to move forward near Wislica, Poland in January 1945. Commanded by Lt.Col. Vasiliy P. Ishchenko, this regiment was one of the few equipped with KV-85 tanks in August 1943, and later re-equipped in October 1944 with new IS-2m tanks to make up for attrition. Although nominally a "separate" regiment, it served with the 4th Guards Tank Corps through the remainder of the war. At the time of the January Vistula-Oder offensive, it had 19 out of an authorized 21 heavy tanks. This regiment or its neighboring regiment were responsible for destroying a German King Tiger company near Lisow later in the month.



An IS-2m of the 34th Guards Heavy Tank Regiment, commanded by Lt. Col. Mikhail A. Oglobin enters the outskirts of Poznan in western Poland in late February 1945. This unit was supporting the 8th Guards Army during this operation. This is clearly the later IS-2m as it has the new bow casting. (M. Baryatinskiy)

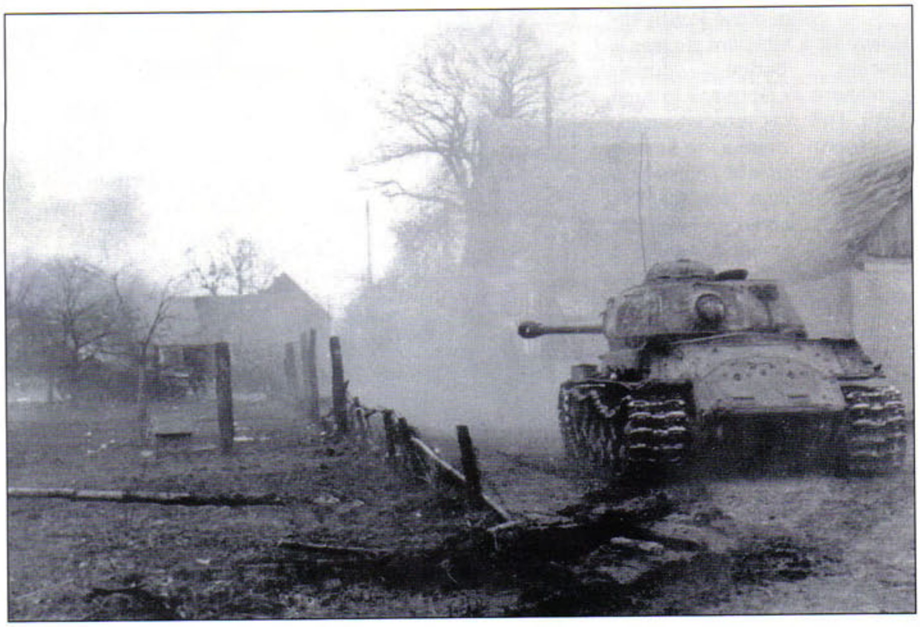


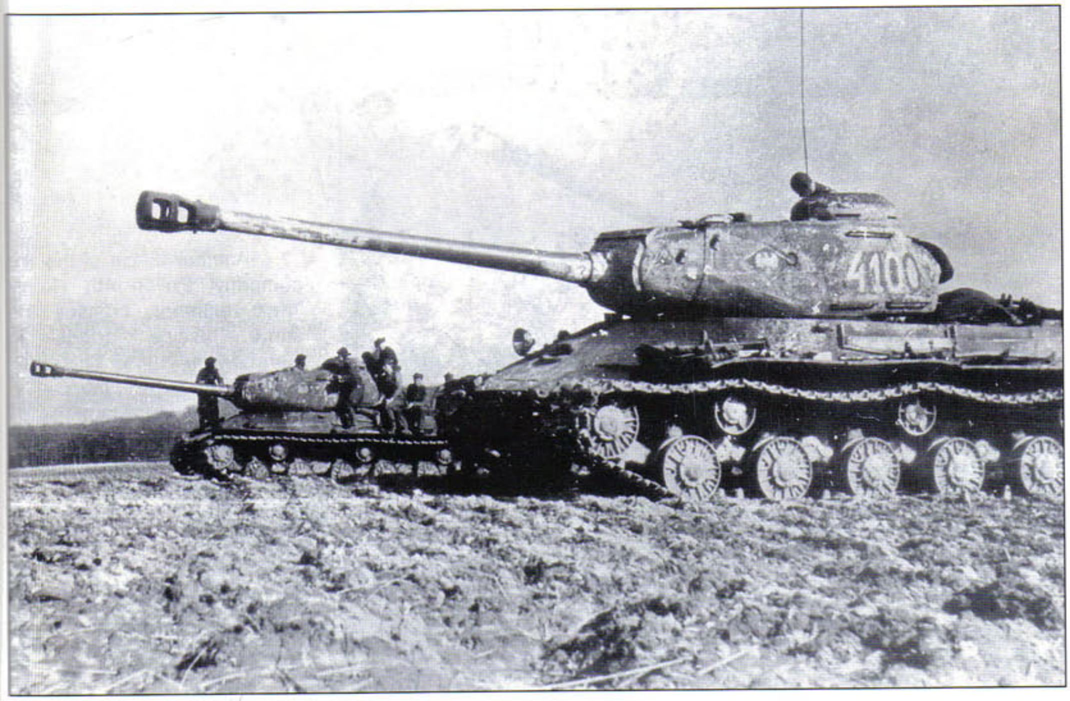
Another IS-2m of the 34th Guards Heavy Tank Regiment in Poznan on 23 February 1945. This tank has already seen some action as its fourth roadwheel station is missing a wheel, from mine damage or a worn-out wheel bearing.



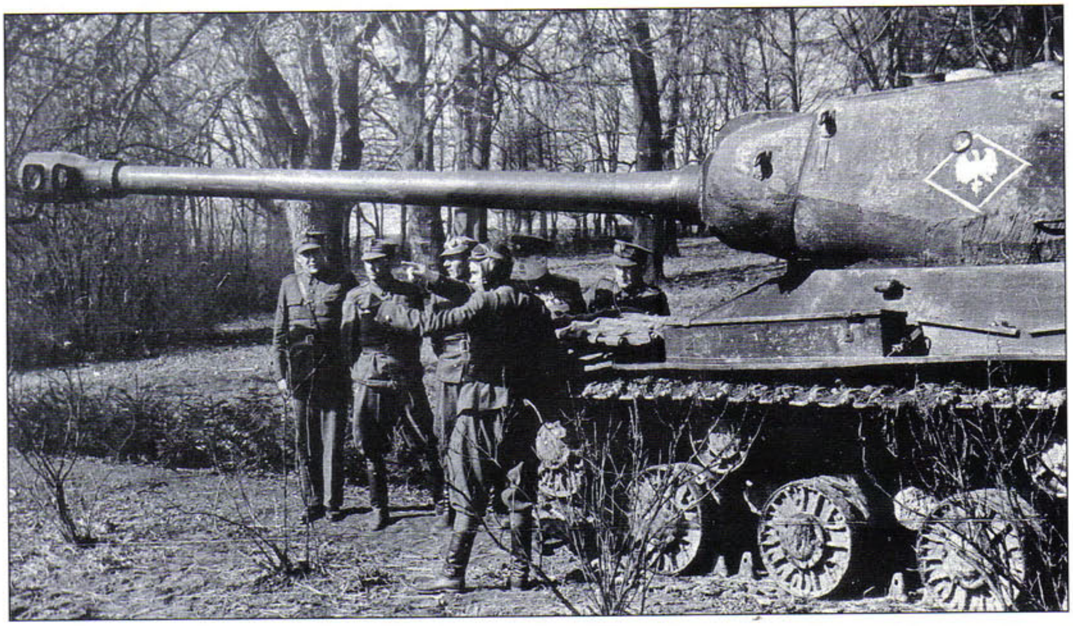
A company of IS-2 heavy tanks of the Polish 4th Heavy Tank Regiment enter Miroslawiec, Poland during the fighting there in March 1945. The Polish People's Army (LWP) received 71 IS-2 tanks which were used to form two heavy tank regiments, the 4th and 5th Heavy Tank Regiments (Pulk ciezkich czolgow). The tanks still show signs of their winter white-wash camouflage, a reminder of the bitter winter weather of 1945. (Janusz Magnuski)

A Polish IS-2 of the 4th Heavy Tank Regiment engages targets in the village of Miroslawiec in western Poland in March 1945. This unit was mainly equipped with IS-2 heavy tanks produced in August 1944 in Chelyabinsk. This appears to be tank 4311, of the 1st platoon, 3rd company. Soviet-pattern heavy tanks regiments were organized into 4 companies each with a company commander's tank, and two platoons of two tanks each for a total of 21 tanks. (Janusz Magnuski)



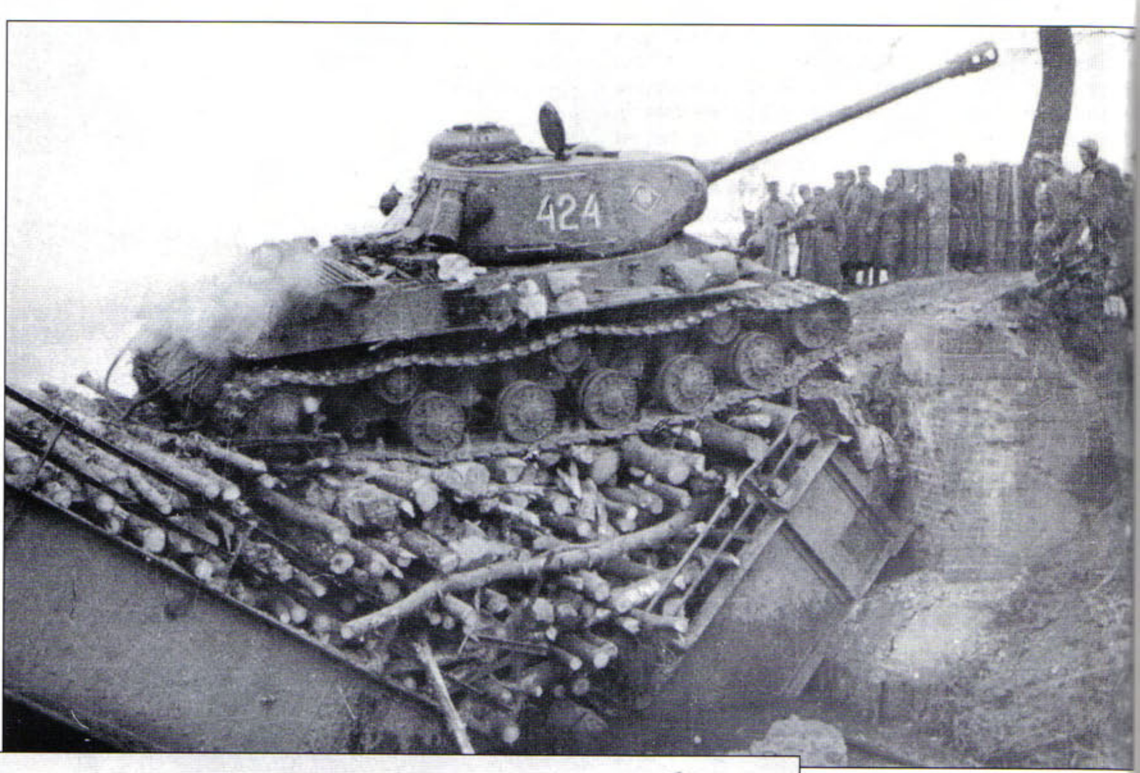


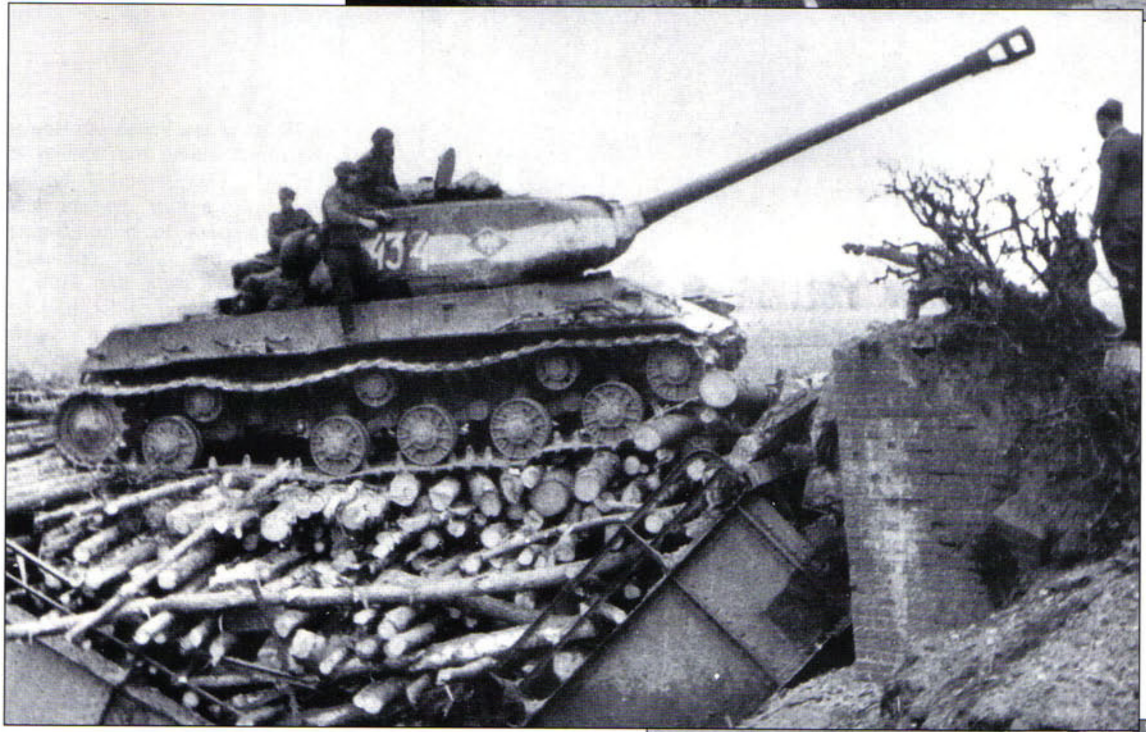
An IS-2m of the Polish 4th Heavy Tank Regiment during the fighting in March 1945. The regiment began switching from a four digit tactical numbering system to a three-digit system so the 1st company commander's tank went from 4100 to 410, the last zero being crudely painted over. This tank carries the unit insignia which doubled as national insignia, a white Piast eagle on a red diamond. (Janusz Magnuski)



Officers of the Polish 4th Heavy Tank Regiment discuss plans in front of an IS-2m heavy tank during operations in Germany in the spring of 1945. The senior officers wear the traditional Polish four-cornered rogatywka cap. In fact, many senior officers in the LWP were Russian and Ukrainian officers seconded from the Red Army due to a shortage of trained personnel in the LWP. The Polish 4th Heavy Tank Regiment was credited with 31 German armored vehicles and 76 artillery pieces destroyed in combat, for a loss of 14 IS-2 heavy tanks.(Janusz Magnuski)

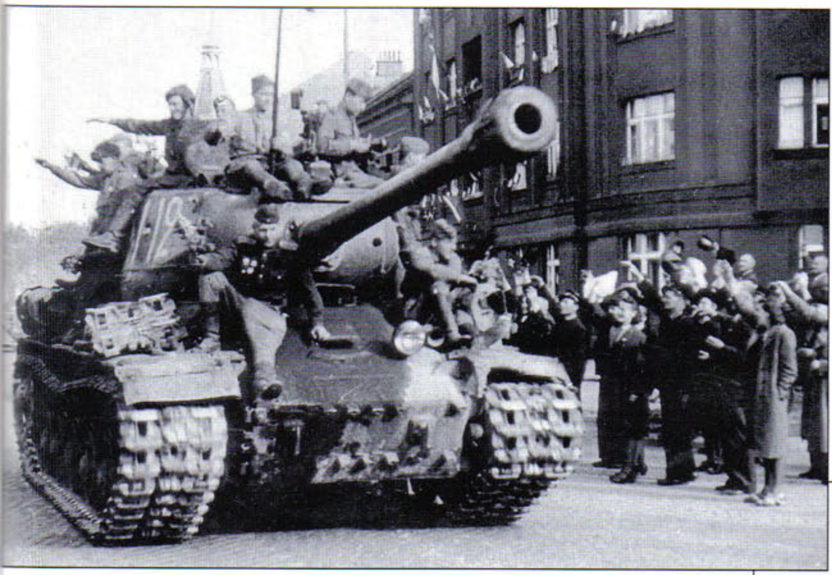
An IS-2m of the Polish 4th Heavy Tank regiment crosses a fascine bridge during operations in Germany in April 1945. This was an improvised, short-term means to move heavy equipment across a destroyed bridge. Note that this tank is lacking its last roadwheel, probably due to a mine or worn-out bearings. (Janusz Magnuski)



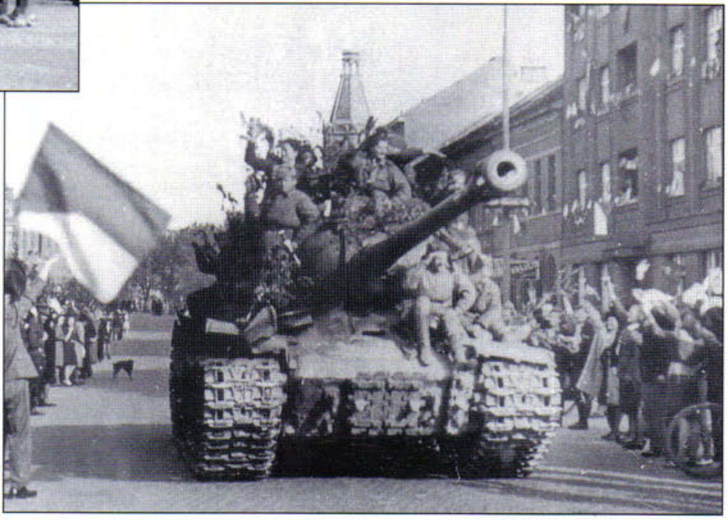


Another IS-2m of the 3rd company, Polish 4th Heavy Tank regiment, crosses the same fascine bridge in Germany in 1945. This view offers several interesting contrasts. Notice that this tank already is painted with the white Allied recognition sign on the turret. In April, the Allies agreed that the Soviet aerial recognition sign would be a white band around the turret and a white cross on the roof. This tank also has a missing wheel, but on the 5th station. (Janusz Magnuski)

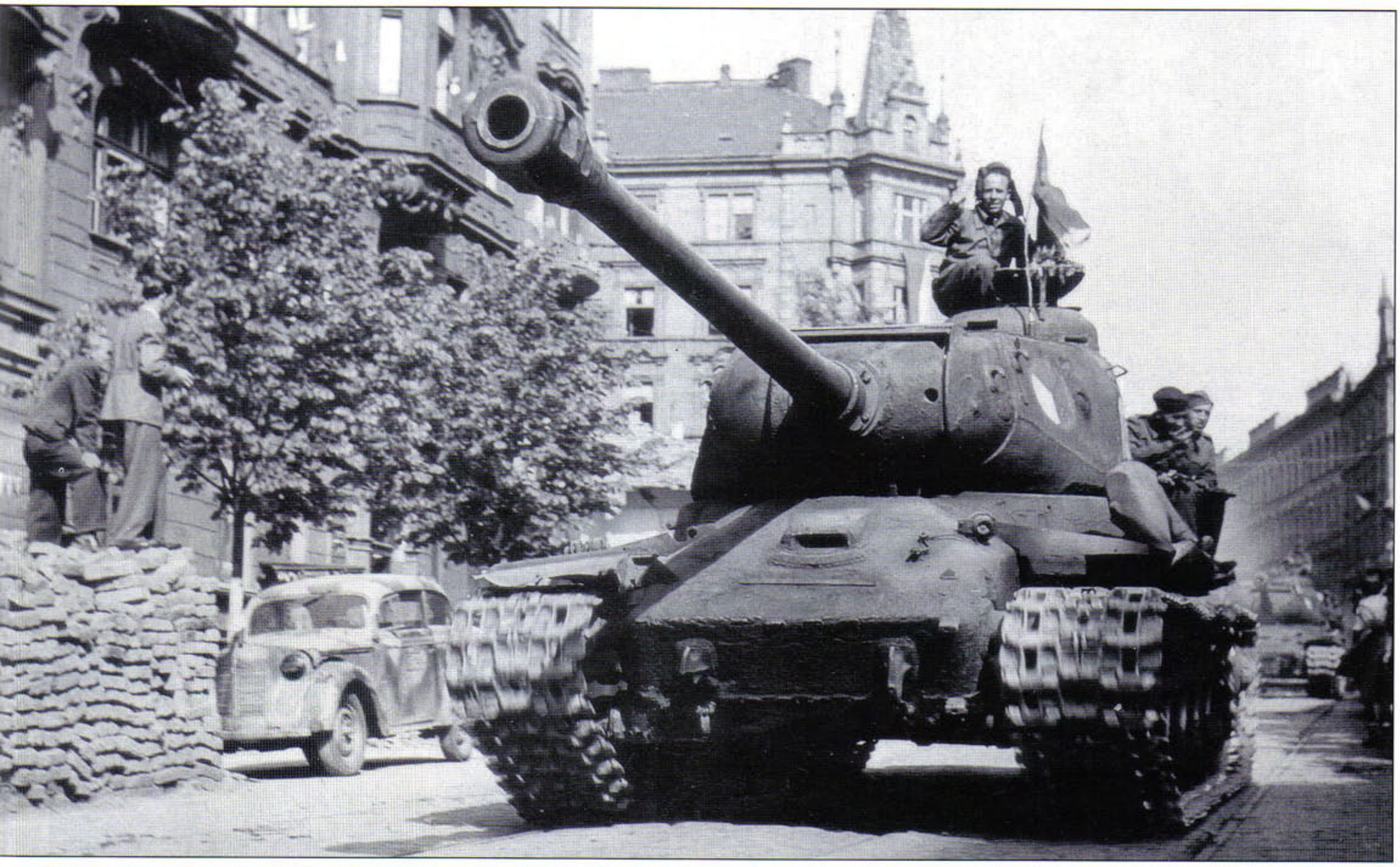
The citizens of Moravska-Ostrava greet the crew of an IS-2m of the 42nd Guards Heavy Tank Brigade of the 38th Army of the 4th Ukrainian Front as they enter the city on 30 April 1945. The larger tank brigades often used a three digit tactical number, the first number indicating the regiment, the second the company, and the third, the individual vehicle. These brigades had a nominal strength of 65 IS-2m heavy tanks.



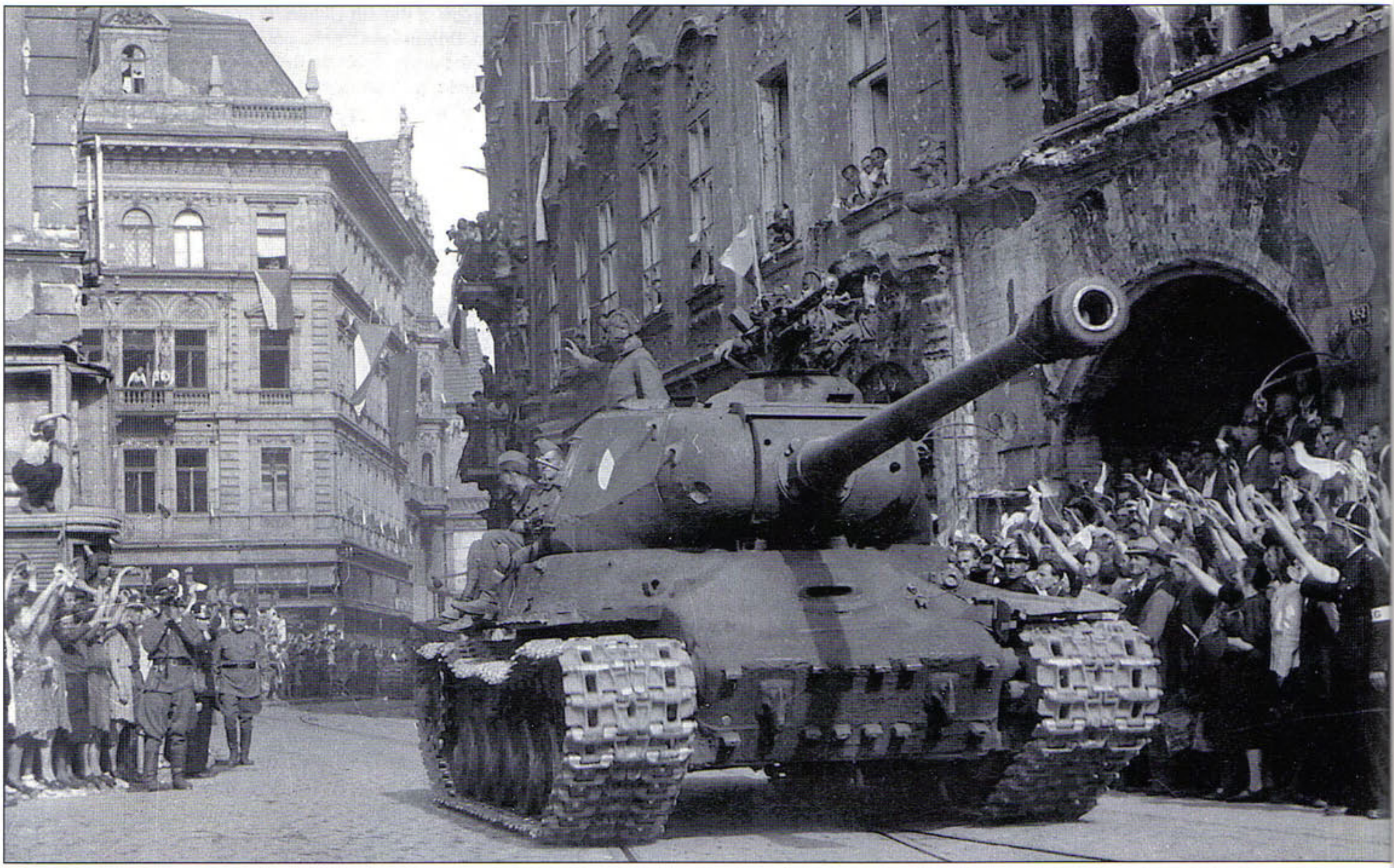
An IS-2m of the 4th Ukrainian Front enters Hradec Kralove in eastern Bohemia, Czechoslovakia on 5 May 1945 to the cheers of local citizens. Soviet operations in Czechoslovakia actually continued after fighting had ended in Berlin. The three digit tactical number suggests it belongs to a Guards heavy tank brigade. (CTK)



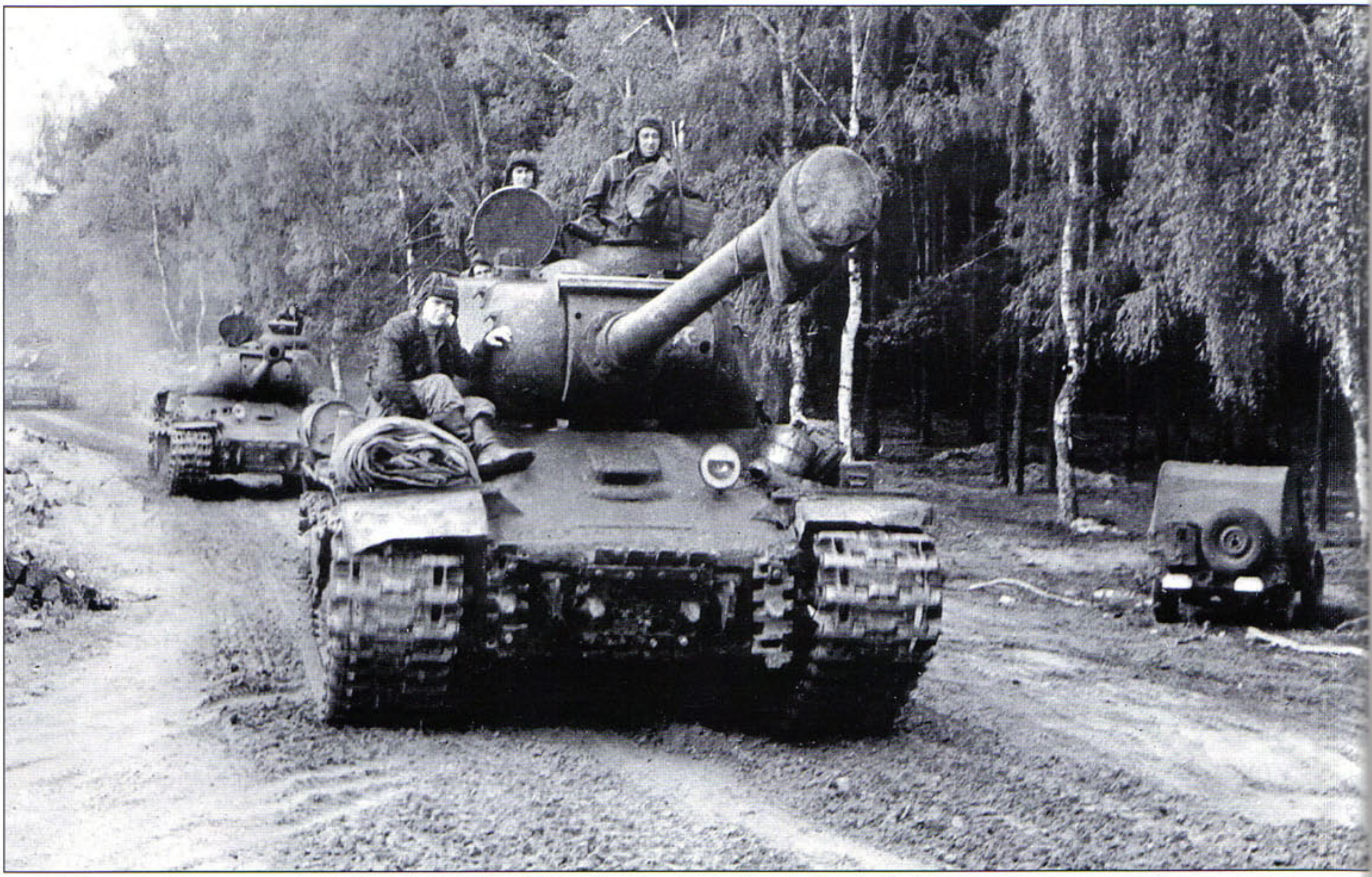
Another IS-2m enters Hradec Kralove on 5 May 1945. This is probably a tank of the same unit as is seen in the other photograph.



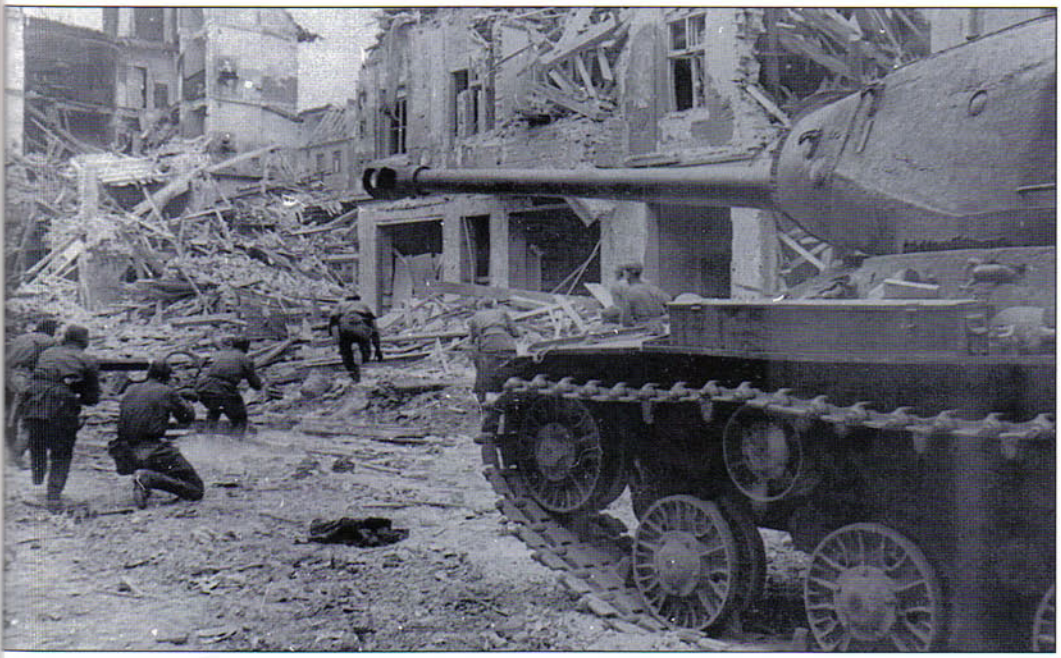
The Czechoslovak 1st Tank Brigade received a handful of IS-2m heavy tanks in April before reaching Prague. Here they are seen entering the city in ay 1945. They carry the Czechoslovak national insignia, a tri-color roundel, on their turret sides.



A view of a IS-2m of the Czechoslovak 1st Tank Brigade in the Old Town section of Prague in May 1945. This is a late production IS-2m fitted with the external 12.7mm DShK heavy machine gun on the commander's cupola, a feature only seen towards the end of the war.

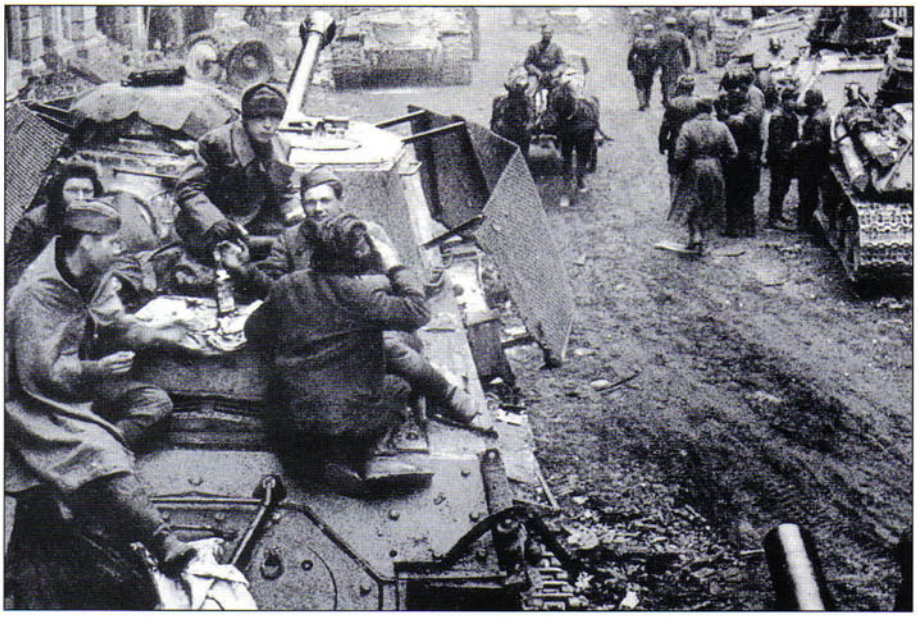


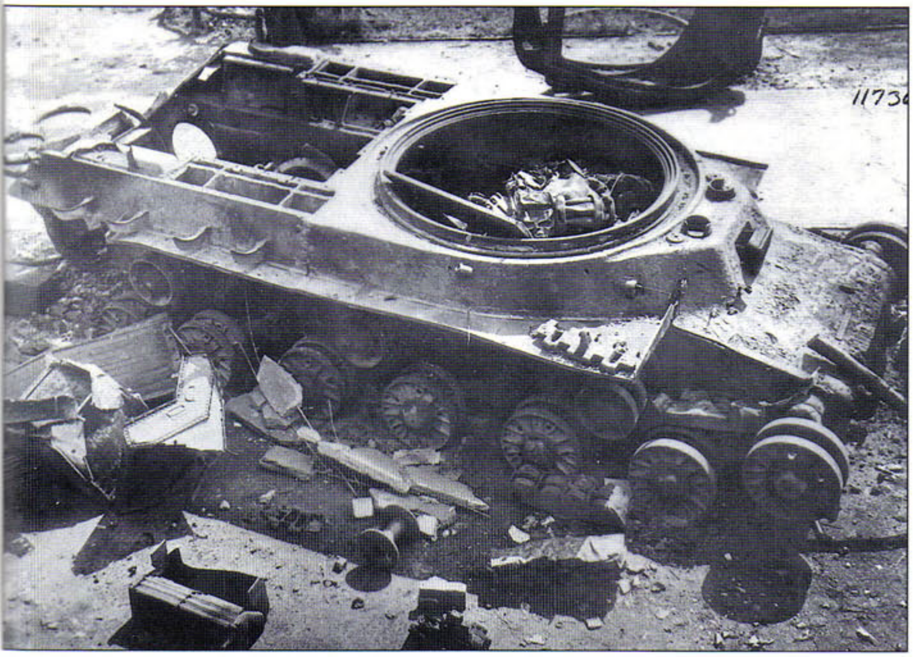
An IS-2m company moves up outside of Berlin in May 1945, with a Lend Lease jeep evident to the right. There is a small white star as a tactical markin on the mantlet, and the front headlight has been partially painted out for night driving.



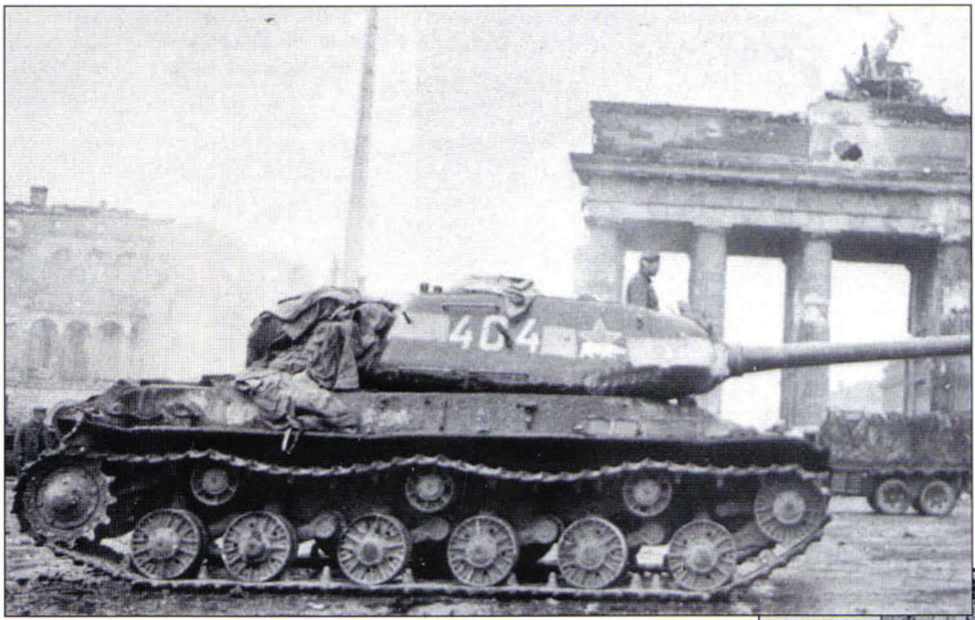
An IS-2m provides cover for a group of Soviet infantry during the street fighting in Berlin in May 1945.

Although not of best quality, this is a rare view of an IS-2m fitted with stand-off screen armor on its turret during the Berlin operation. While some of the anti-Panzerfaust screens were made from looted bed-springs, many were made by local Red Army mobile workshops as appears to be the case here.



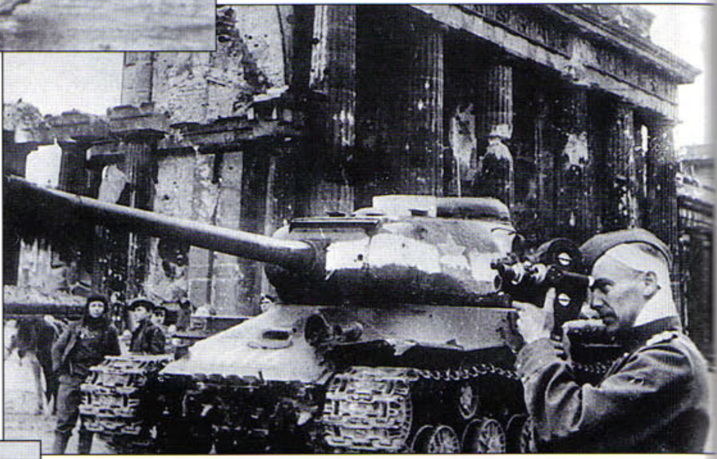


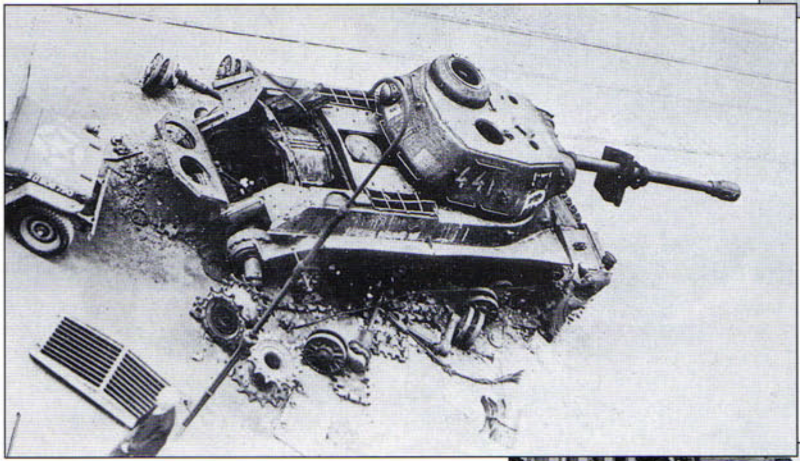
An IS-2 knocked out during the street fighting in Berlin in May 1945. A catastrophic ammunition explosion has blown off the turret and gutted most of the vehicle. This is clearly an IS-2, and this view shows the KV-13 front hull casting that was characteristic of this version. (US Army Ordnance Museum, APG)



An IS-2m of the 7th Guards Tank Brigade near the Brandenburg Gate in Berlin in May 1945. In 1944, this brigade had taken part in chasing the German army north through Finland, ending the campaign in the arctic region of northern Finland and Norway. When re-equipped as an IS-2m heavy tank brigade late in 1944, the white polar bear was selected as the unit's emblem, seen here painted on the red star.

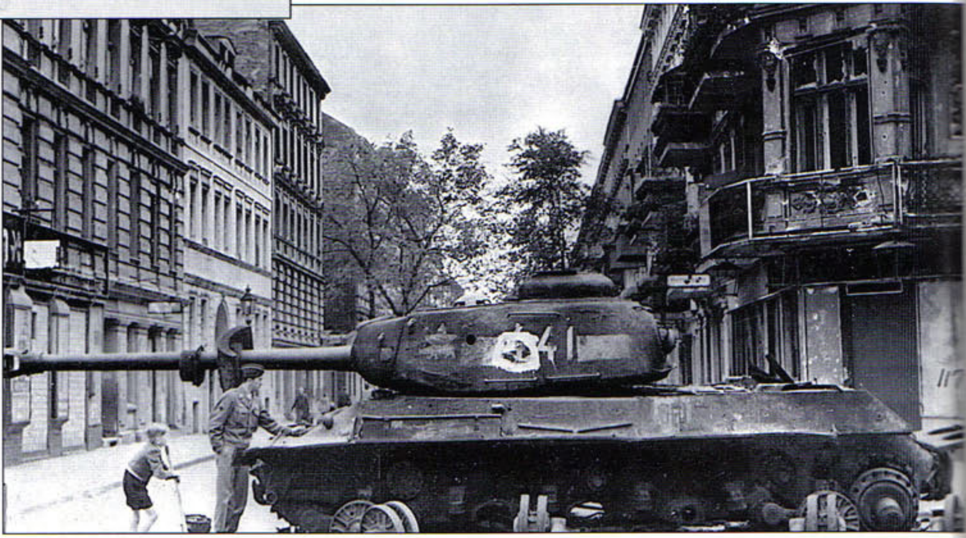
Another IS-2m of the 7th Guards Tank Brigade in Berlin in May 1945. The injured cameraman in the foreground is R. Karmen who later produced the "Unknown War" television series about the Soviet Union in World War 2.



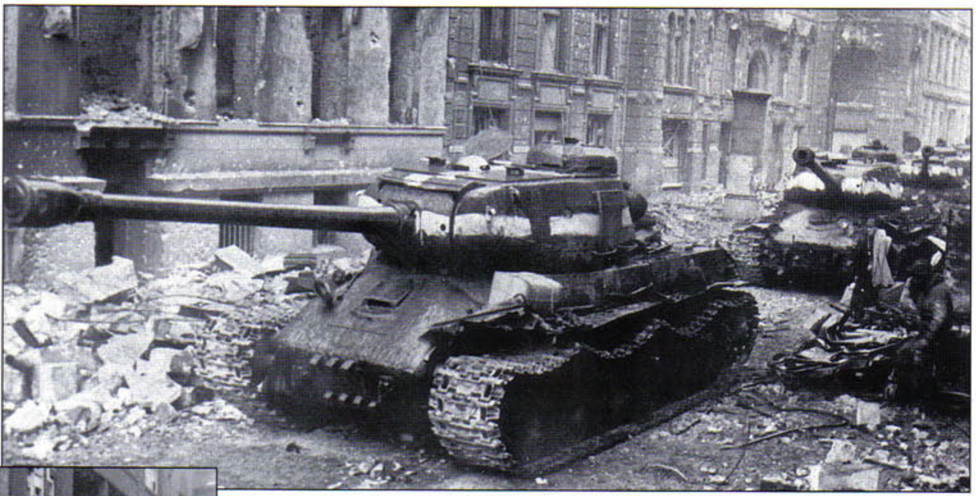


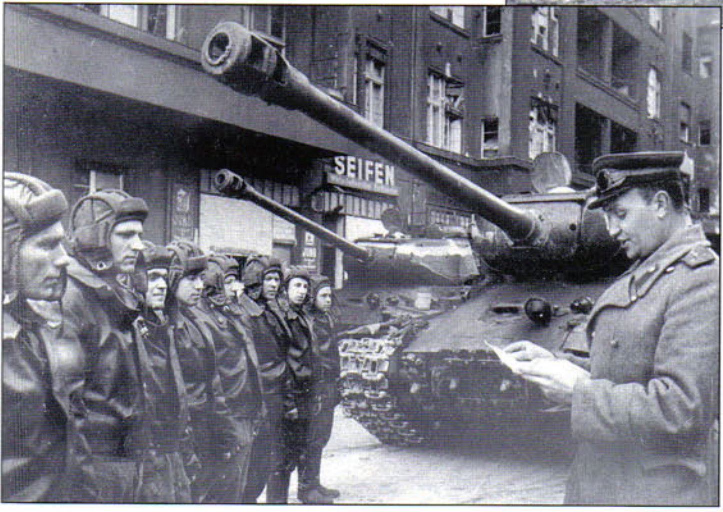
Another view of tank 441 of the 7th Guards Tank Brigade in Berlin. This overhead shot provides some detail of the engine deck area, but also shows that not all of the brigade's tanks carried the white air-recognition roof cross during the Berlin operation.

A US paratrooper from the 82nd Airborne Division examines a destroyed IS-2m of the 7th Guards Tank Brigade in Berlin after the war. The US Army later took the turret off this tank and shipped it back to the United States Aberdeen Proving Grounds for technical examination. This tank is also shown in the color plates. (US Army Ordnance Museum, APG)

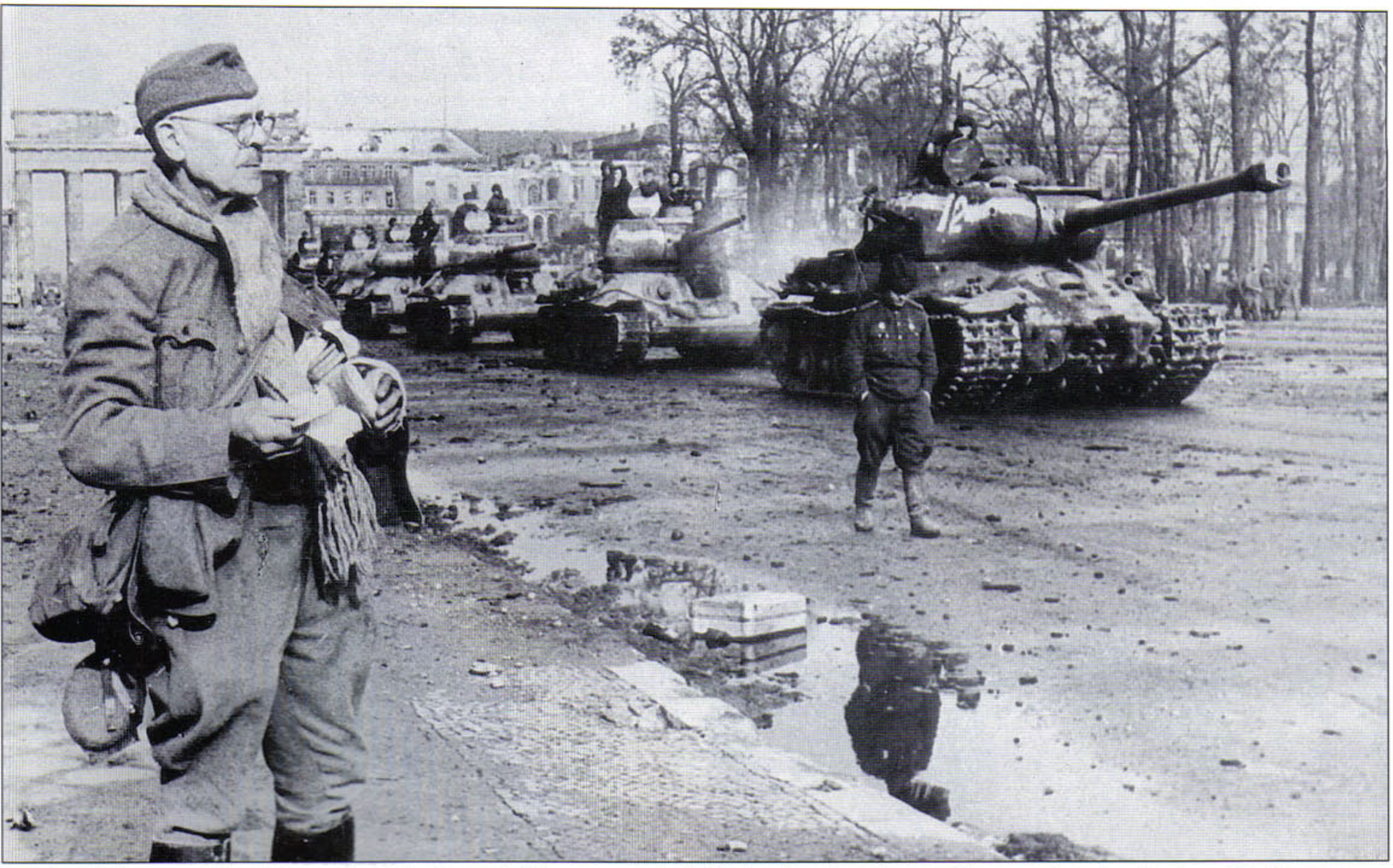


A column of IS-2m heavy tanks advances through the shattered ruins of Berlin in the final days of the war. They have the full Allied recognition insignia including the roof cross and white turret bands.

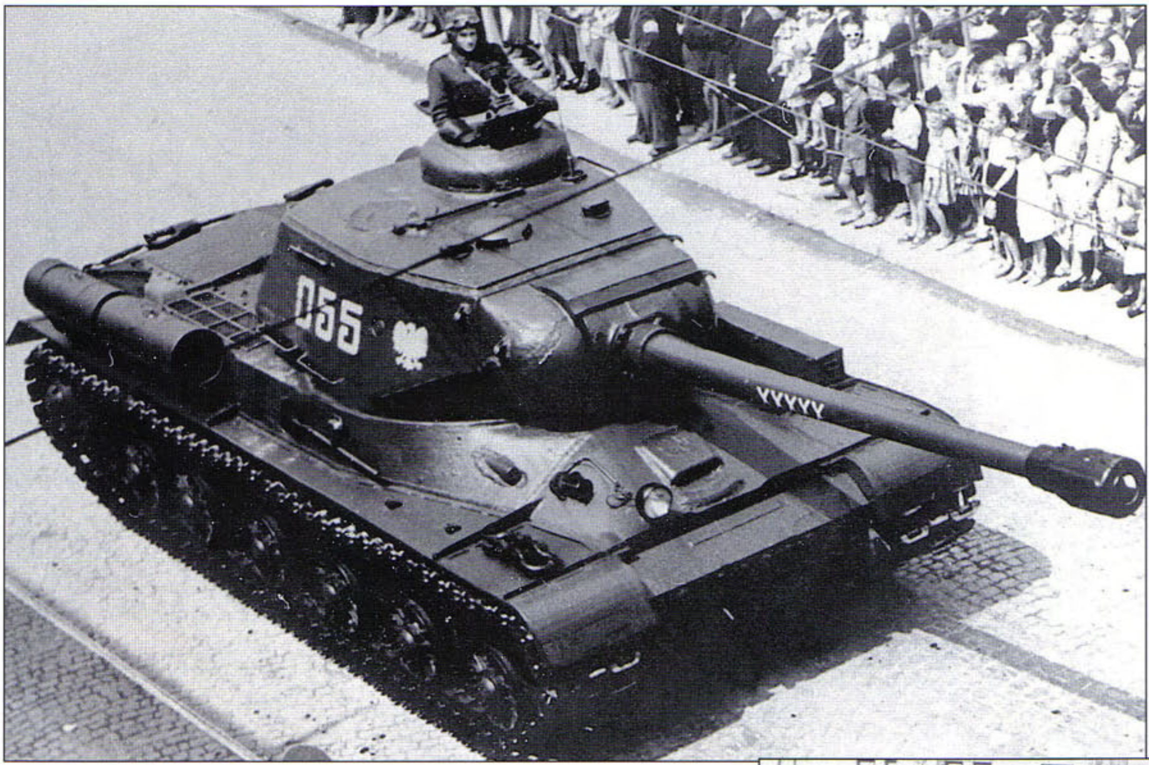




A Soviet officer reads the order of the day announcing the surrender of Germany to his troops in front of their IS-2m heavy tanks in Berlin, May 1945.

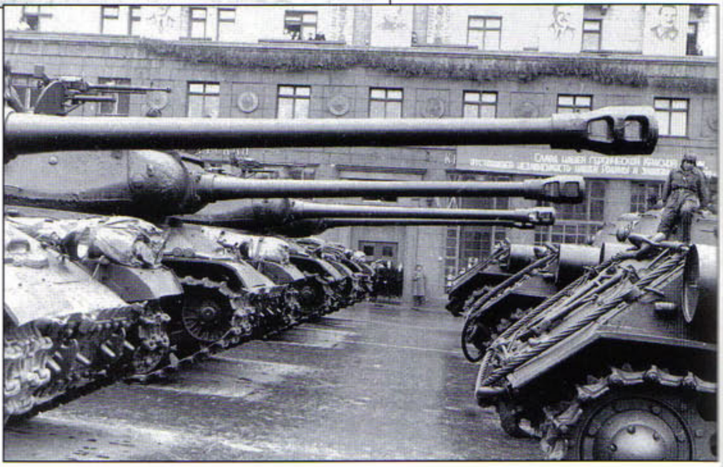


An old German soldier looks on days after the end of the war as a Soviet tank column lead by an IS-2 moves down the street past the Brandenburg Gate.

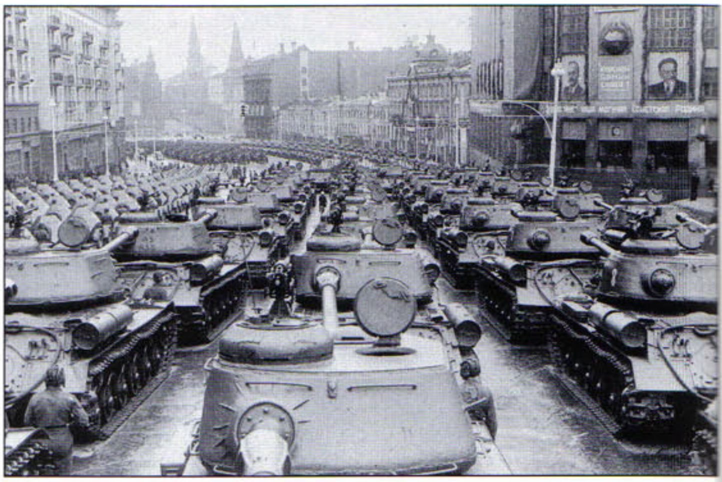


Following the end of the war in Europe, there were numerous parades to celebrate. This is a Polish IS-2m on parade after the war with the 7th Heavy Tank Regiment. The five white "X" on the barrel are kill claims; this practice was mainly for post-war parades and does not seem to have been commonly used during the war. Poland operated 26 IS-2 and 2 IS-3 heavy tanks after the war. (Janusz Magnuski)

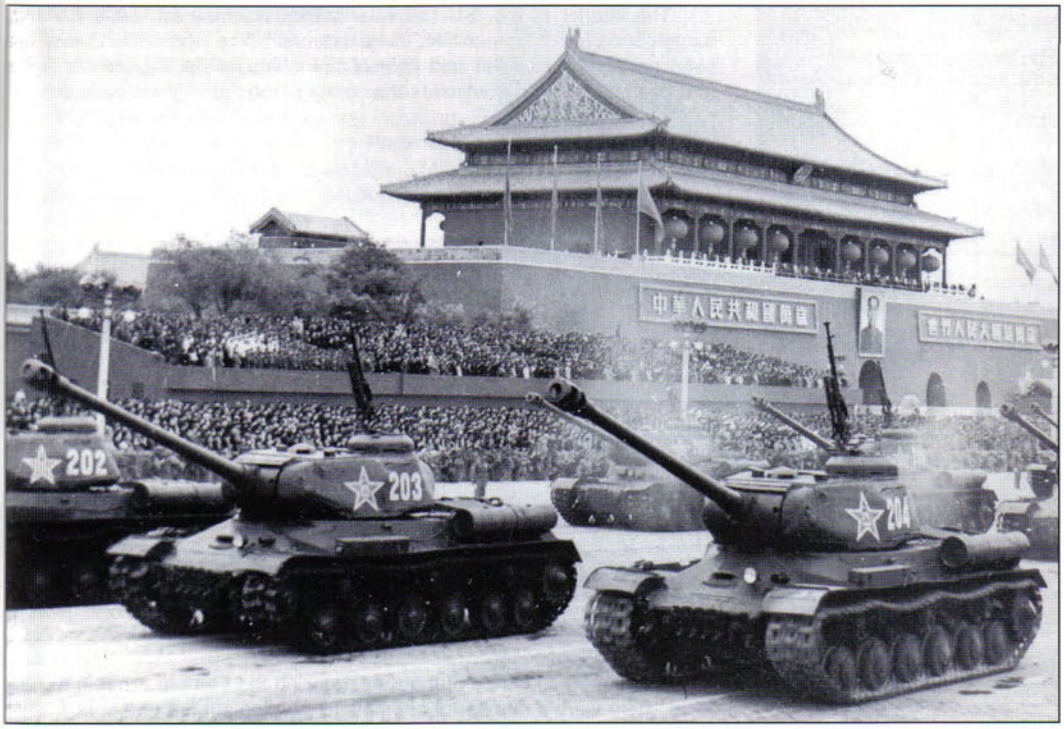
With the war over, it's time to celebrate. The crew of a Soviet tank indulge in a little piano playing in the outskirts of Berlin, May 1945.



IS-2m heavy tanks figured prominently in the post-war celebrations in Moscow. Here, freshly painted IS-2m tanks line up on Gorkiy Street before the June 1945 parade.

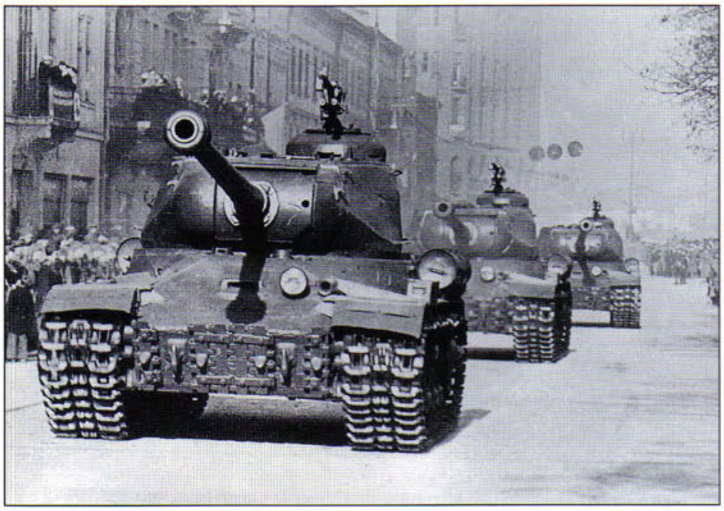


The streets leading into Red Square are crammed with armored vehicles as the Victory Day parade begins in Moscow in June 1945. The casting on the rear of the turret of the IS-2m in the foreground shows the effect of wear on the sand casting molds with traces of the steel marker rods showing. These are late production IS-2m tanks with the 12.7mm DShK heavy machine gun mounted on the commander's cupola. To the left of the photo are a large number of BA-64B armored cars.

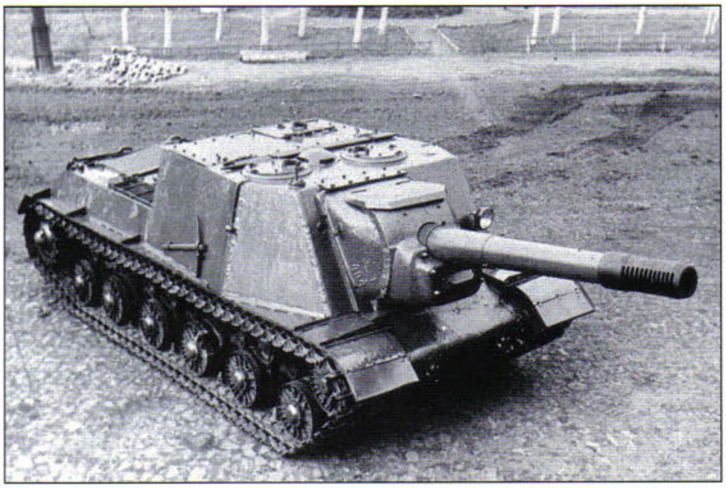


The People's Republic of China obtained IS-2m heavy tanks starting in the early 1950s. These are reported to have been first deployed in Korea in 1951, but there is little evidence that they saw any combat in Korea. By the end of the war, the Chinese Army in Korea had four independent GHQ armored regiments each organized with four T-34-85 companies, and a single IS-2 company with five tanks each. Here they are seen in a post-war parade.

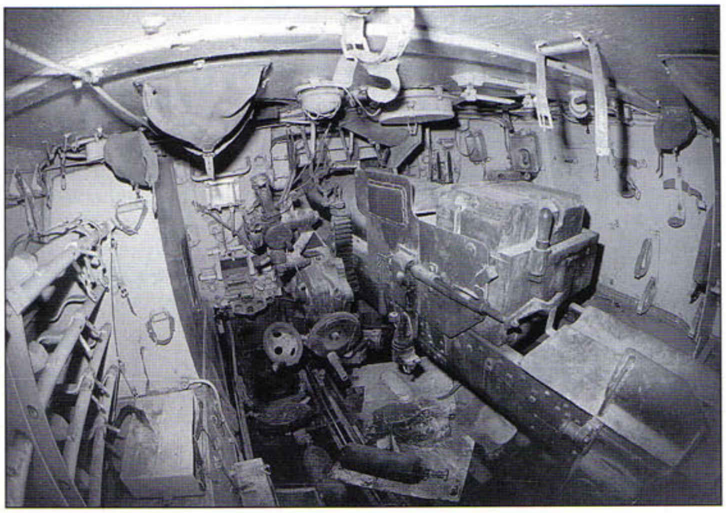
The IS-2m remained in service in dwindling numbers through the 1950s as it was gradually replaced by the T-10 heavy tank. Here a pair of IS-2m take part in night exercises in August 1958. (A. Sergeyev)



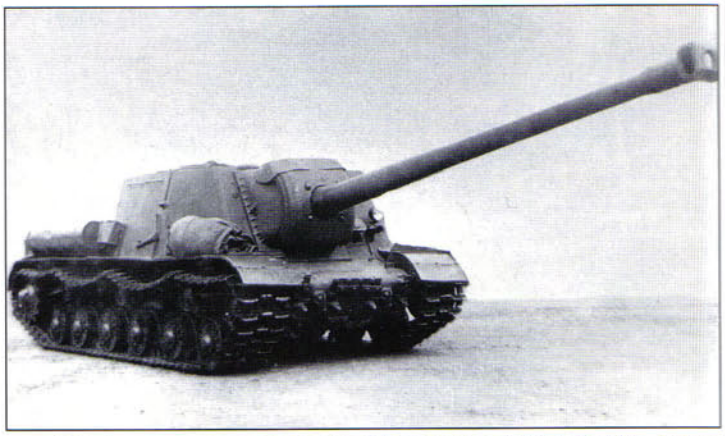
Besides the parade in Moscow, IS-2m tanks figured prominently in displays elsewhere in the Soviet Union, including these tanks on parade in Lvov, in Ukraine in November 1945. (M. Baryatinskiy)



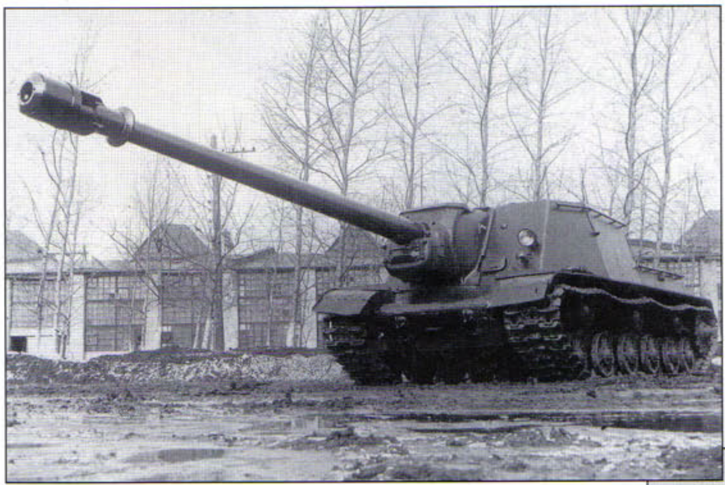
In the autumn of 1943, the Chelyabinsk designers began to adapt the SU-152 assault gun to the IS tank hull. The result was the ISU-152 assault gun. This is the original prototype of the vehicle and it is quite clear that there were few changes between the prototype and series production vehicles.



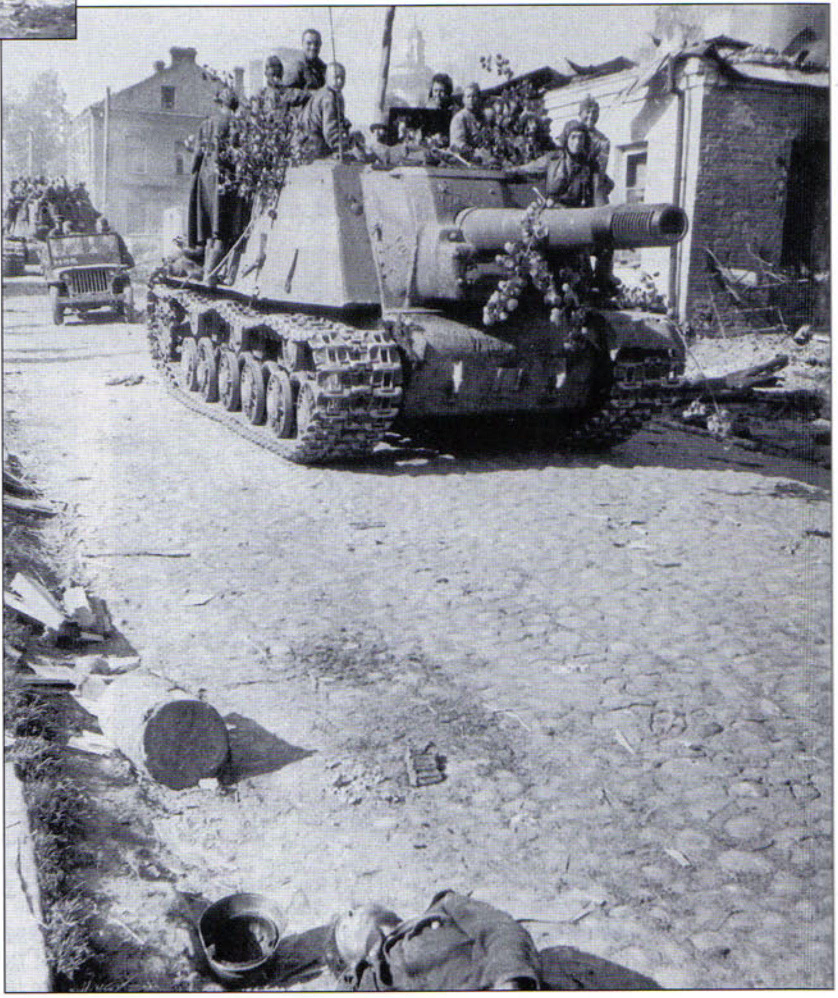
The interior of the ISU-152 was spacious compared to the SU-152, though once full of ammunition, it was cramped. The ammunition racks are seen on the extreme left and right of this photo, while the breech of the massive ML-20S gun dominates the center of the fighting compartment.



With the appearance of the King Tiger on the Eastern Front in August 1944, there were a number of attempts to develop a more potent tank killer version of the ISU series. This is the ISU-130, which mated the S-26 130mm gun to the ISU chassis. It fired a 33 kg projectile at speeds of 900 m/s, and was able to penetrate most tanks of the day at long range. However, the Red Army did not have many problems with the King Tiger due to their small numbers and technical shortcomings, and no ISU-130 tank destroyers were built.

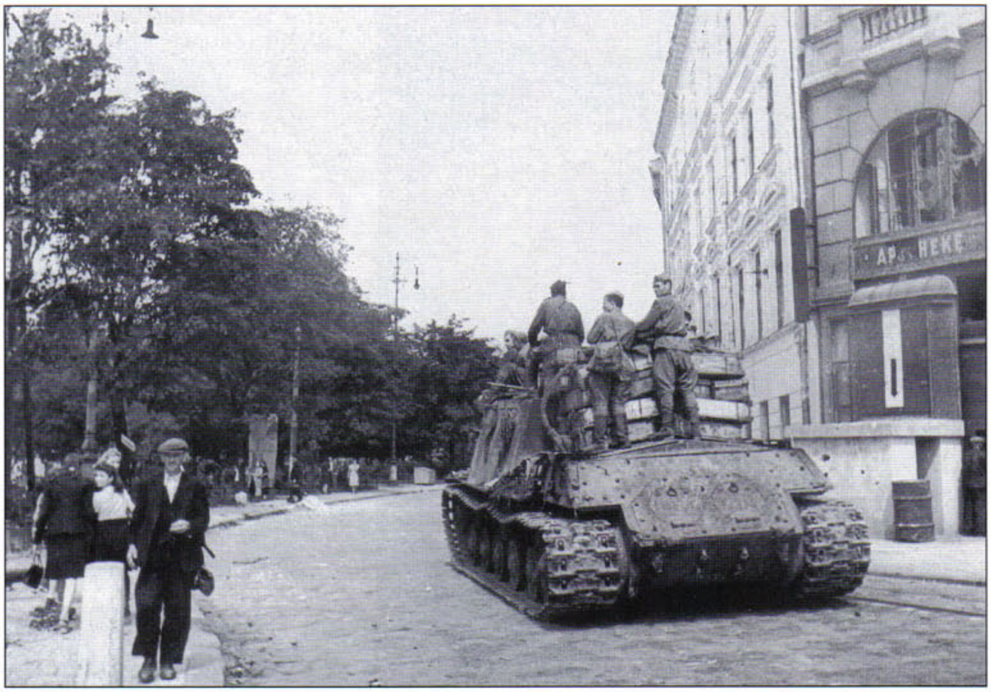


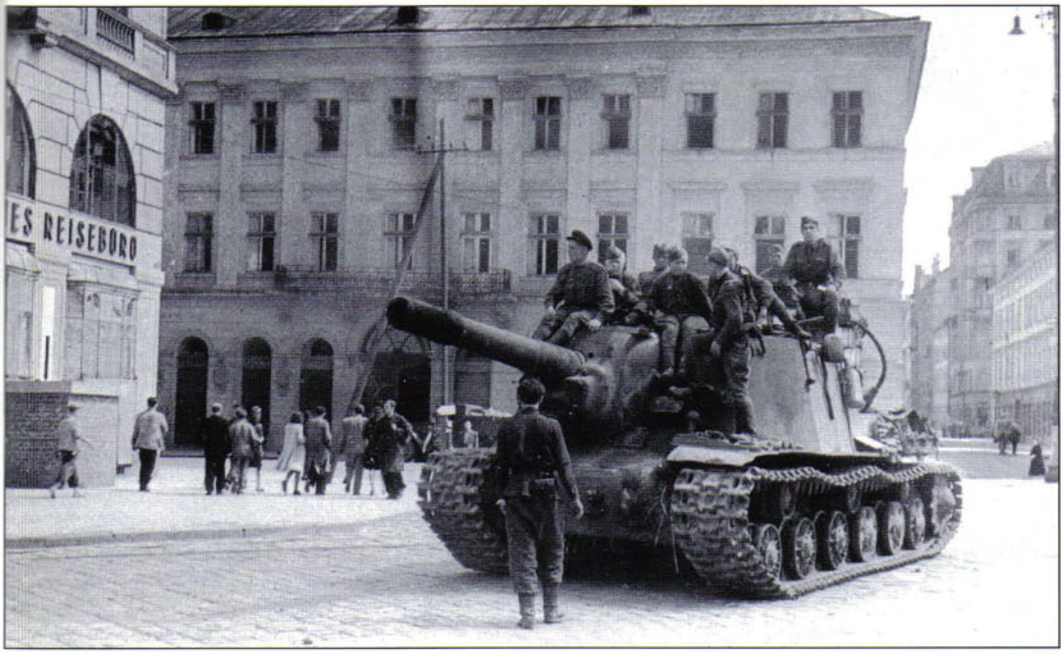
Another alternative was the ISU-152-1, which mounted the long-barreled BL-8 152mm gun instead of the short-barreled ML-20S. This was intended to deal with heavily reinforced concrete bunkers on the Oder defensive line, as well as newer German tanks such as the King Tiger. A related type, the ISU-152-2 with the BL-10 gun was also examined. In the end, it was not accepted for service, partly due to concern over the difficulty of moving a vehicle with such a long gun tube.



The ISU-152 saw some service in the spring 1944 battles, but did not become available in any quantity until the summer 1944 battles. Here, an ISU-152 advances through the town of Polotsk in Byelorussia in July 1944 during Operation Bagration. Two ISU-152 regiments took part in the capture of the city on 4 July 1944, the 333rd and 335th Guards Heavy SP Artillery Regiments, both of which were in support of the 6th Guards Army of the 1st Baltic Front. By this stage of the war, Lend-Lease jeeps were a standard item of equipment in Red Army mechanized units, being used by regimental staffs. (Dorenskiy)

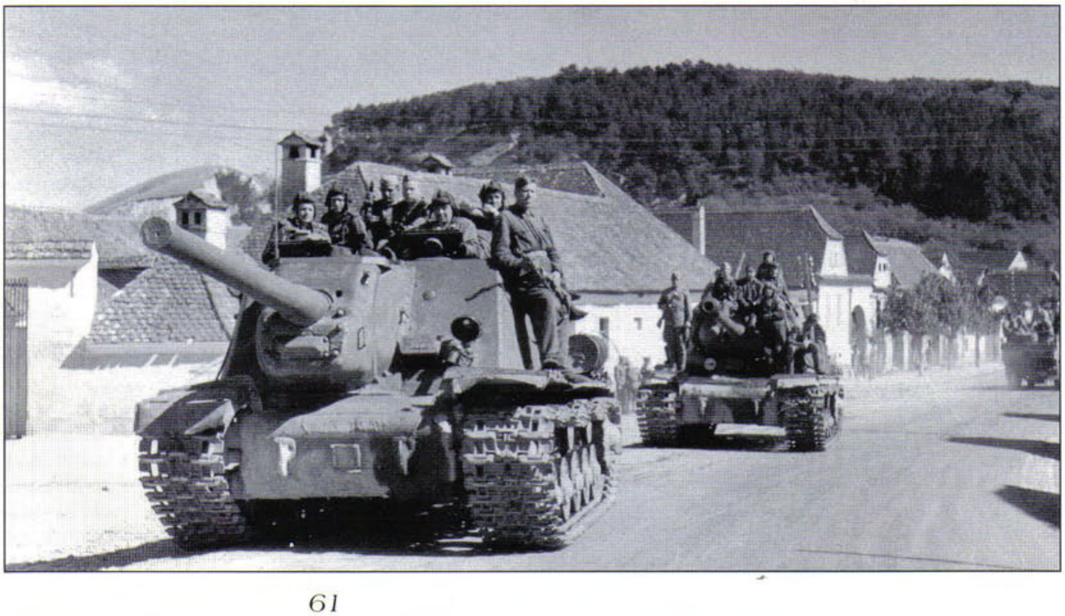
An ISU-152 moves through Lvov in western Ukraine after it was liberated on 27 July 1944 by the 1st Ukrainian Front as part of the Lvov-Sandomierz offensive. There were two ISU-152 units involved in the fighting including the 368th Guards Heavy SP Artillery Regiment (TSAP) in support of 60th Army, and the 374th Guards Heavy SP Artillery Regiment supporting the 4th Tank Army. (P. Troshkin)

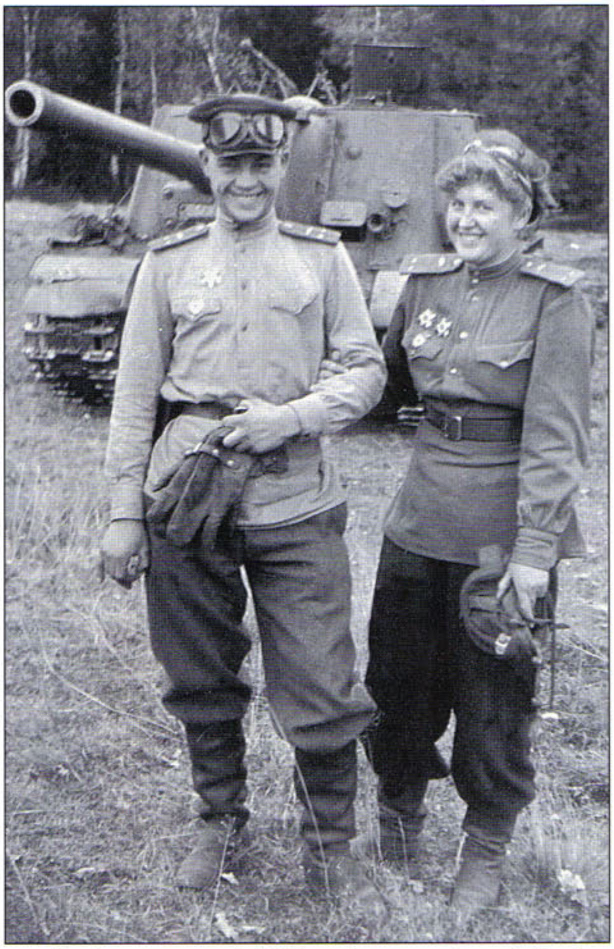




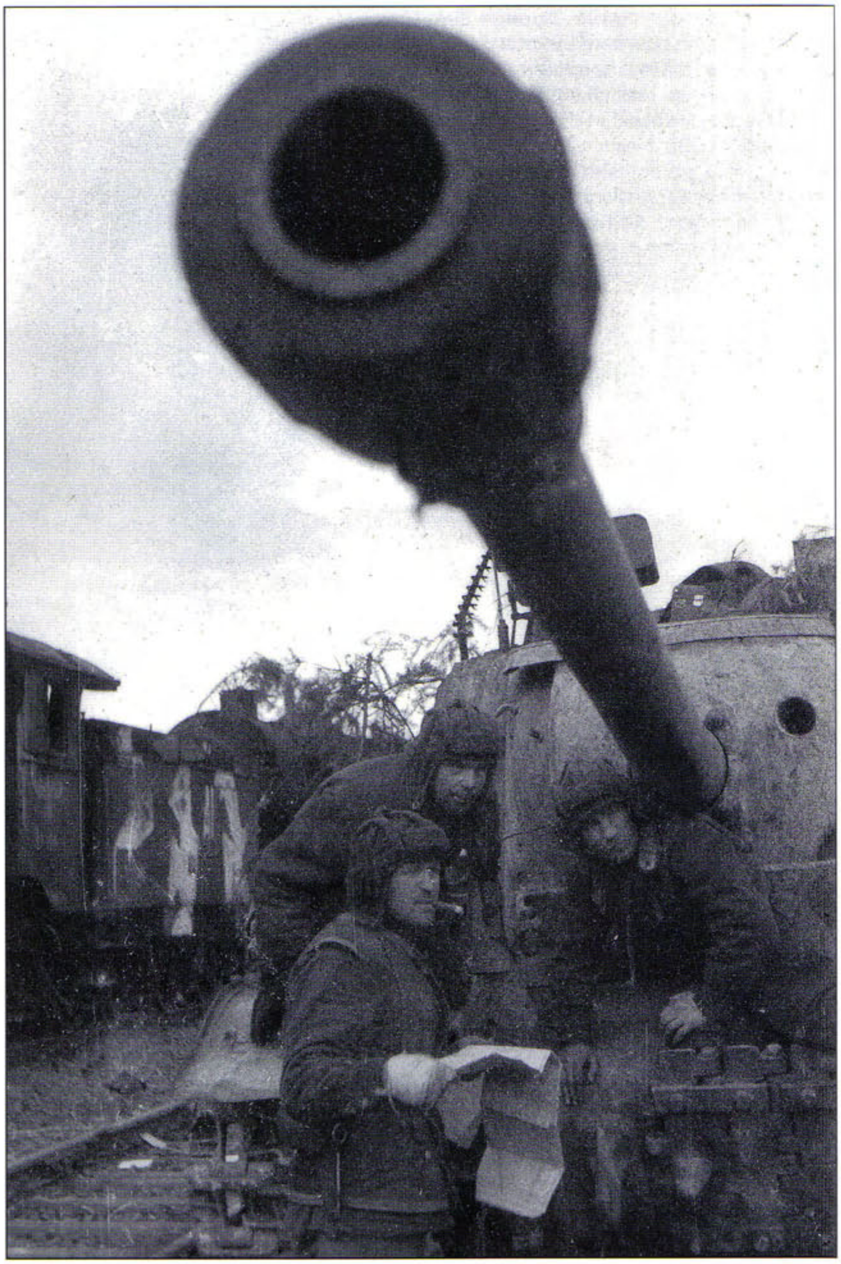
An ISU-152 of one of the two heavy SP artillery regiments in the center of Lvov, western Ukraine in early August after the city was liberated. This frontier city has a tumultuous history, having been the center of a bitter struggle between Polish and Ukrainian nationalist militias in 1918. It changed hands again when the USSR seized eastern Poland in 1939 and was fought over in 1941 and 1944; it is now part of Ukraine. This ISU-152 is sitting low in the rear, probably due to the large number of ammunition boxes often carried on the rear deck. (M. Alpert)

An ISU-122 and IS-2 pass through a Romanian village in the hills of Transylvania during the 2nd Ukrainian Front's dramatic advance in September 1944. The Soviet seizure of Romania in the early autumn of 1944 cut off Germany's major remaining source of oil, ensuring its eventual defeat. The ISU-122 was identical to the ISU-152 except for the use of the interchangeable A-19S 122mm gun.

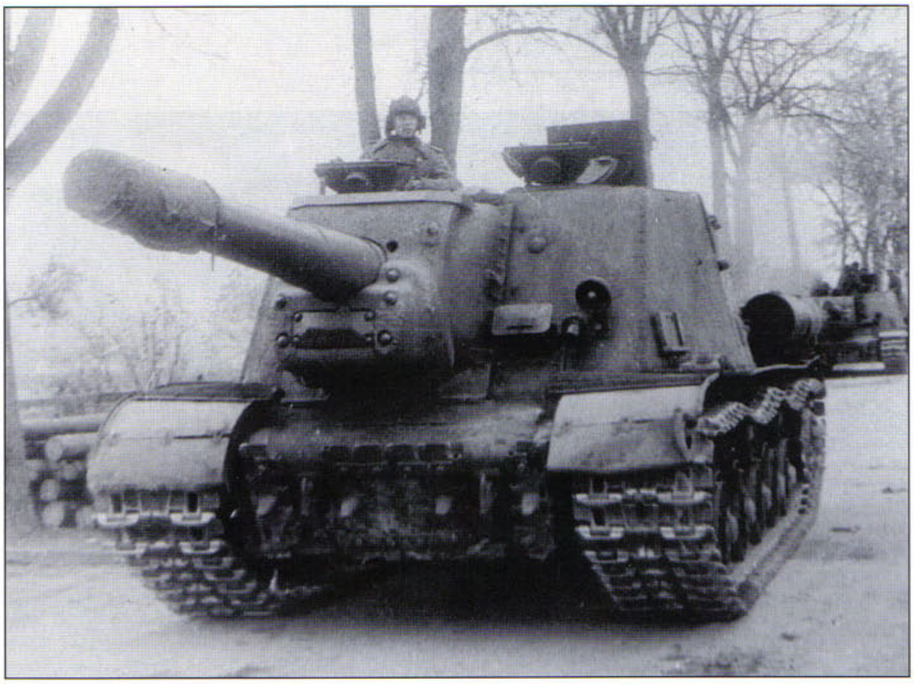




By the summer of 1944, a larger number of Russian women were inducted in the Red Army due to a severe shortage of men. A number of women ended up in armored units, after being recruited from the tank plants where they worked. They were already well trained as drivers, but some later rose in rank to command tank units. To the left is Guards Lieutenant V. P. Orlova who commanded the ISU-122 in the background, with her husband Guards Lieutenant N. N. Orlov who served as the vehicle driver. Their Guards heavy SP artillery regiment served with the 3rd Baltic Front in October 1944. Women made up about 10% of Red Army strength by the end of the war, though the majority were in non-combat roles. (Utkin)

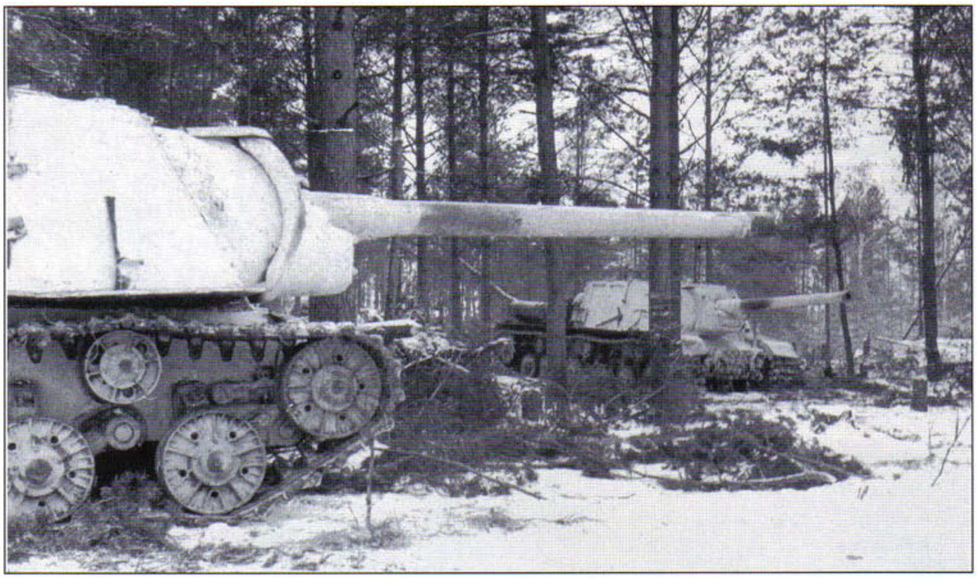


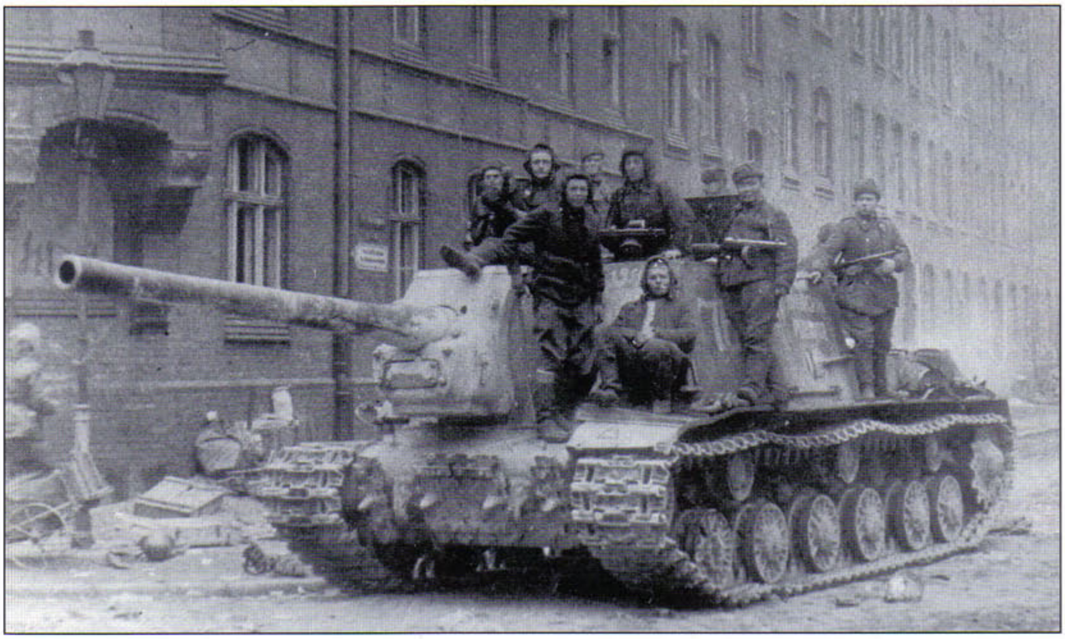
The crew of an ISU-122S commanded by Jr. Lt. Petrov (with the cigar) prepare their mission during fighting by the 3rd Byelorussian Front against the German Third Panzer Army on the Zemland (Samland) peninsula in East Prussia in January 1945. The ISU-122S, also called the ISU-122-2, was an improvement on the basic ISU-122 with the improved D-25S gun. There were no fewer than eight ISU regiments taking part in this campaign with the 3rd Byelorussian Front including the 373rd, 395th with the 5th Army, the 343rd and 345th with the 28th Army, the 337th with the 31st Army and 354th, 348th and 350th Guards Heavy SP Artillery Regiments under frontal command. Indeed, the high value attached to these vehicles meant that they were actually produced in larger numbers than the basic IS-2 heavy tank.



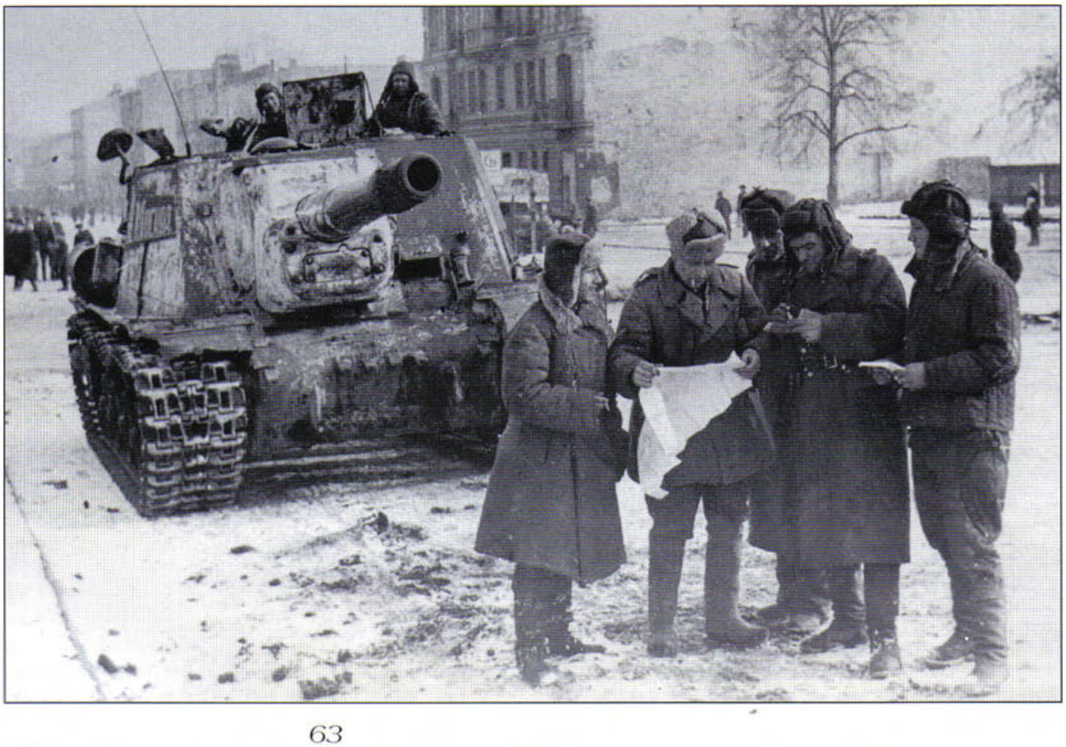
An ISU-152 moves forward during operations in East Prussia in November 1944. East Prussia was the first area of German soil captured by the Red Army. The territory there, intersected by many rivers, woods and waterways, made the fighting extremely difficult. Intense fighting continued all along the Baltic in November-December 1944, while the Red Army units in central Poland were re-equipping for the final offensive against Berlin planned for January 1945.

A pair of whitewashed ISU-122 assault guns of the 2nd Byelorussian Front move forward through the woods in East Prussia during the January 1945 Oder offensive. There were four ISU regiments supporting this front during the offensive, the 340th with 3rd Army, the 342nd with 48th Army, and the 332nd and 365th Guards Heavy SP Artillery Regiments supporting the 5th Guards Tank Army. (Soloviev)

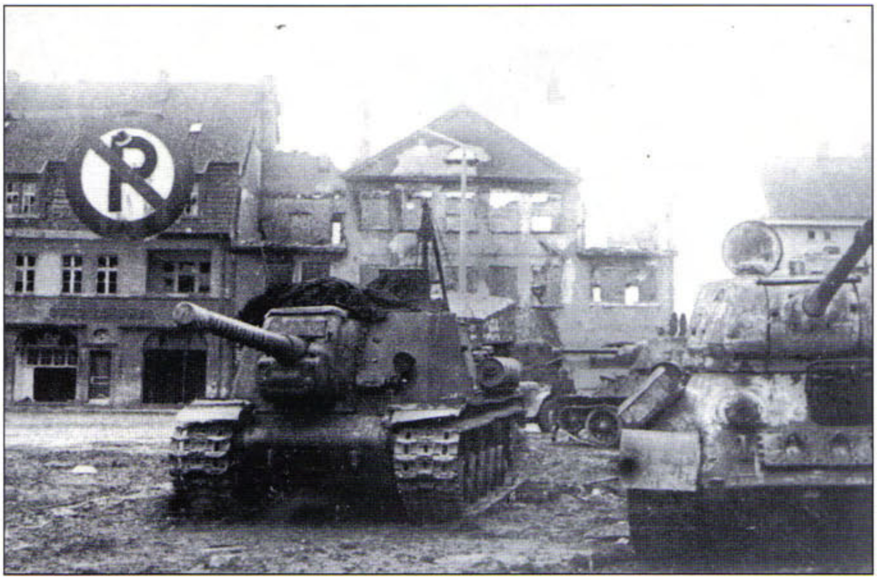




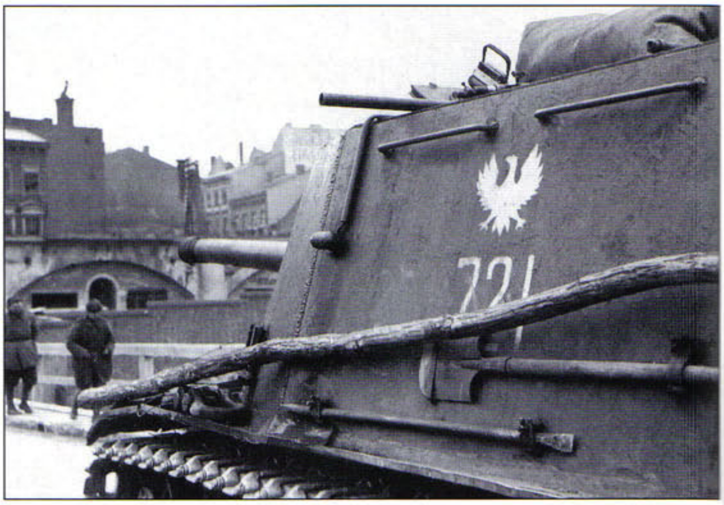
An ISU-122 of the 375th Guards Heavy Self-propelled Artillery Regiment of the 3rd Guards Tank Corps, moves through Gdansk (Danzig), Poland, in early April 1945 shortly after the capture of this key port city on 30 March 1945 by the 2nd Byelorussian Front. Commanded by Col. Stepan Kharitonov, this heavy assault gun regiment was in Supreme Command reserve for the Danzig siege, and assigned to the 3rd Guards Tank Corps to help provide fire support during the city fighting near the docks. It was equipped with both ISU-122 as seen here and the improved ISU-122S, one of which is shown in the color plates in this book. The opening shots of the Second World War had taken place in this city five years before in 1939.



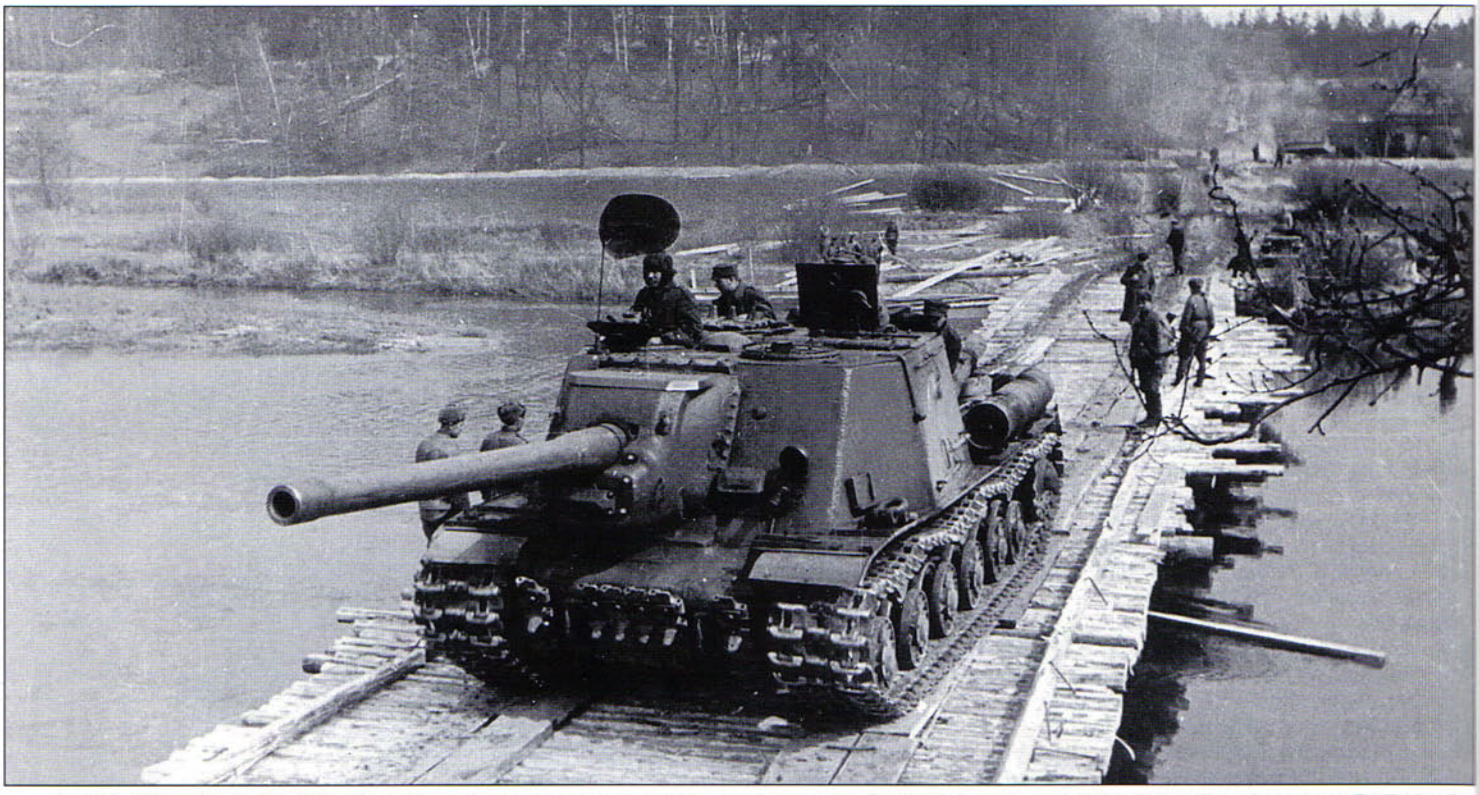
The vehicle commanders of a battery of ISU-152 assault guns commanded by Sr. Lt. Morgunov from the 1419th Heavy Self-propelled Artillery Regiment, 7th Guards Tank Corps, receive further instructions during operations in Czestochowa, Poland, 17 January 1945. This assault gun regiment, commanded by Maj. Vyacheslav A. Shchavlinskiy, provided fire support for the 7th Guards Tank Corps during the January 1945 Vistula-Oder offensive, the first stage of the Soviet drive on Berlin. The vehicle seen here, named "Moskva" (Moscow) is shown in the color plates in this book.



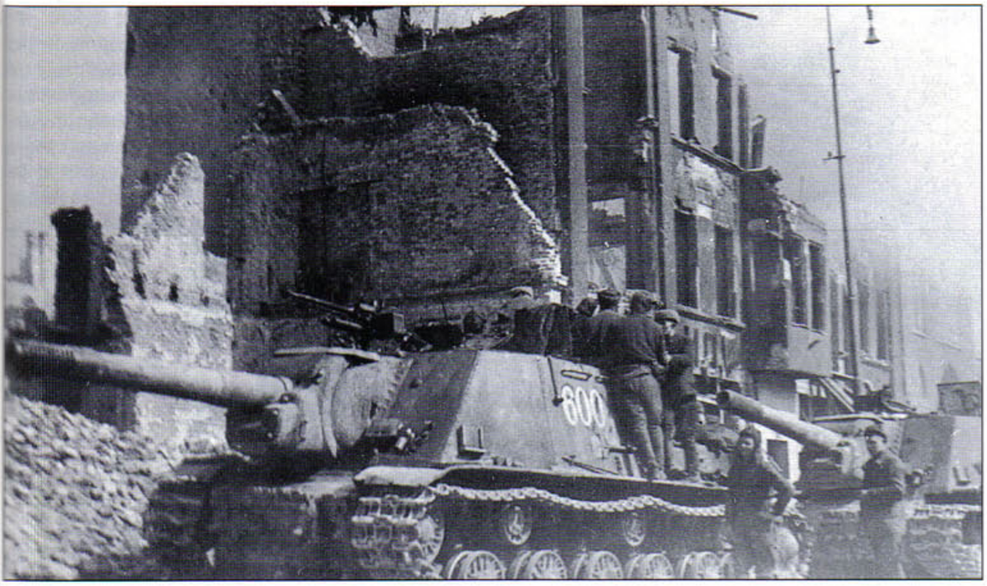
Soviet armor rests in a shattered German village during the January Oder offensive. In the center is an ISU-122 assault gun with what appear to be white kill rings painted on the barrel. To the right is a T-34-85 medium tank and behind it a T-34 Model 1943 tank.



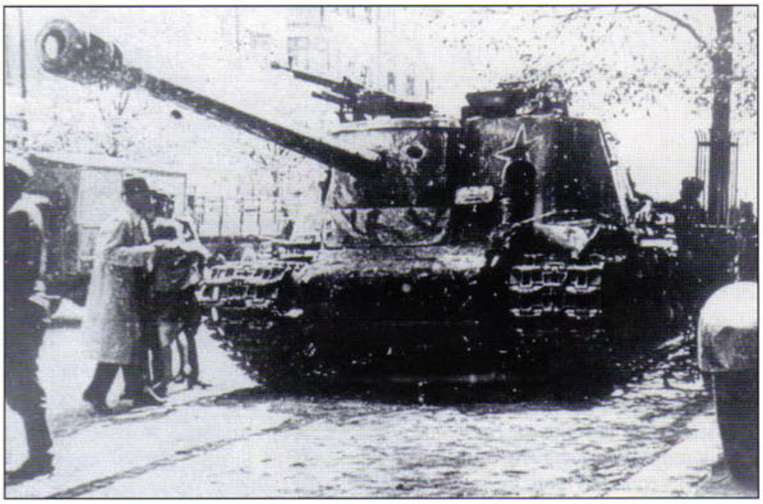
An ISU-122 of the Polish 25th SP Artillery Regiment, 1st Armored Corps after crossing the Nysa (Neisse) river in April 1945 during the assault towards Berlin. This provides a good close-up of the national insignia of the Polish Peoples Army, the white Piast eagle.



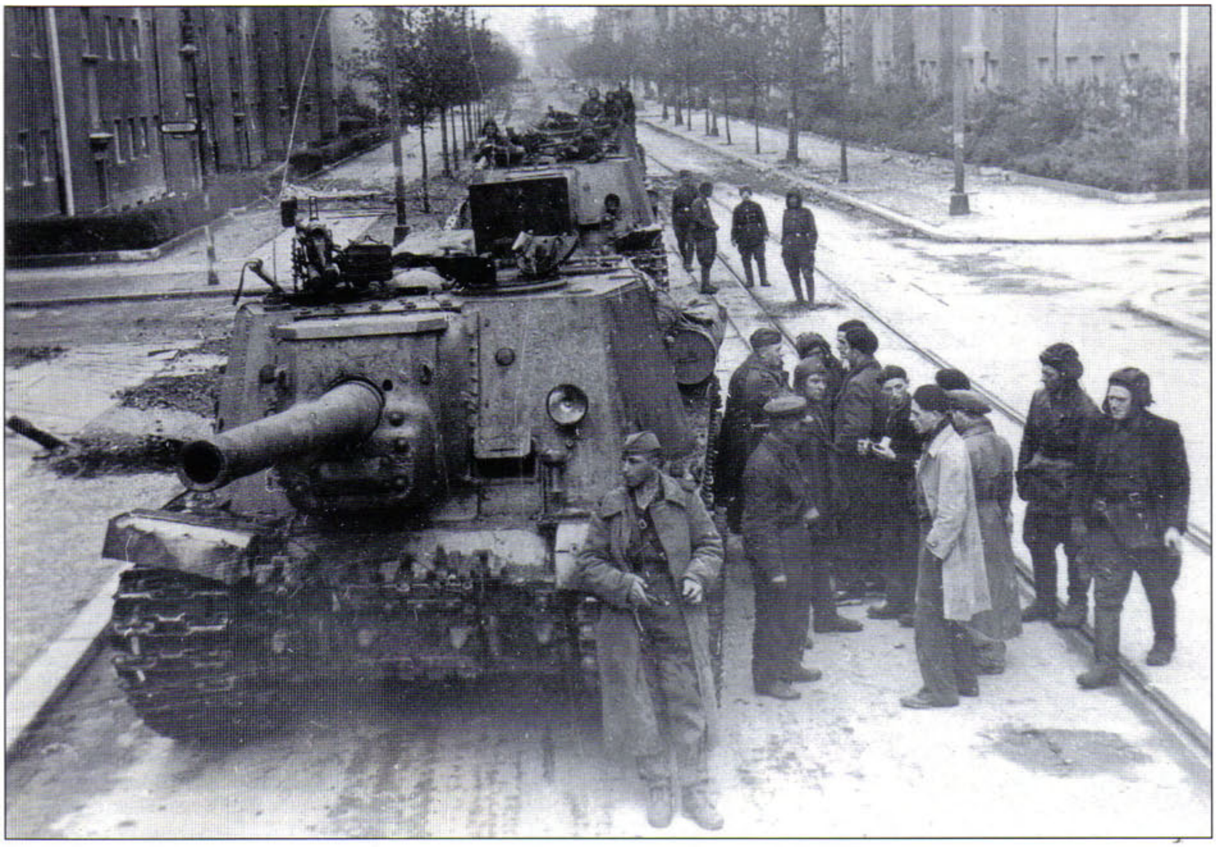
An ISU-122 of the Polish 25th SP Artillery Regiment crosses a bridge over the Nysa (Neisse) river in April 1945 during the advance on Berlin by the Polish 1st Armored Corps. This particular vehicle, tactical number 703, was produced in Chelyabinsk in August 1944. (Janusz Magnuski)



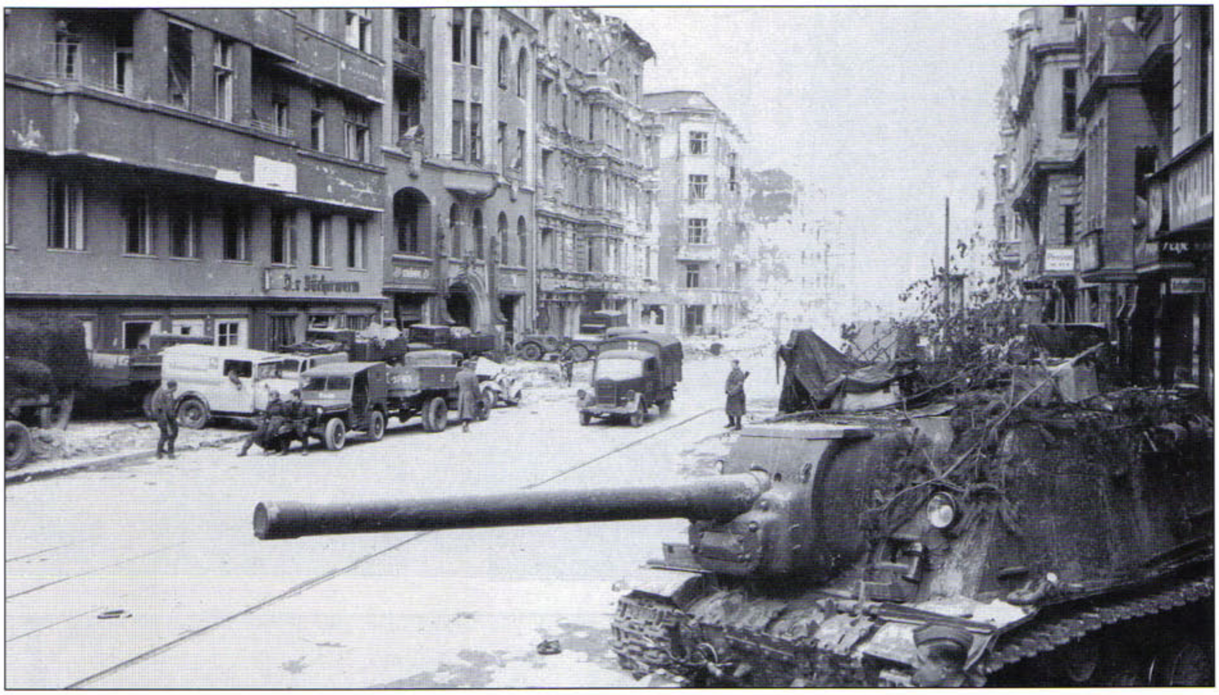
After intense fighting, the 3rd Byelorussian Front finally captured the East Prussian port city of Koenigberg on 9 April 1945. As is evident from this photo, much of the city was in ruins from intense Soviet artillery fire. Six ISU regiments took part in the capture including the 337th, 345th and 350th with the 43rd Army, the 395th with the 50th Army and the 338th and 348th Guards Heavy SP Artillery Regiments with the 11th Guards Army. The tactical number 600 on this ISU-152 suggests that it is a company commander's vehicle.



An ISU-122S of a Guards heavy SP artillery regiment in Jihlava, Czechoslovakia on 9 May 1945 after entry by Soviet troops. This vehicle appears to have an improvised camouflage scheme painted on it, as well as a crudely applied Soviet star in white outline. (Ivan Bajtos)

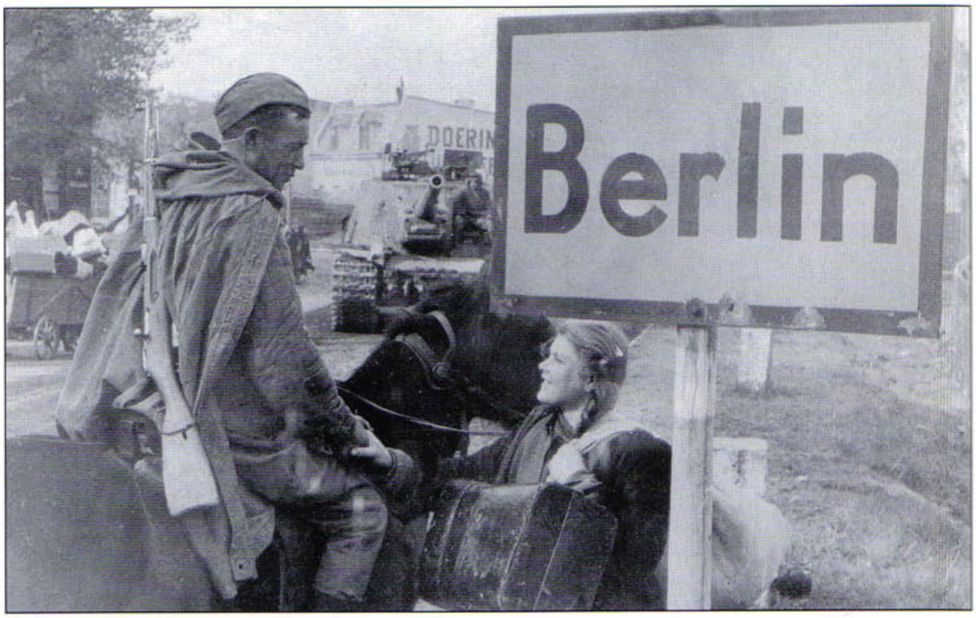


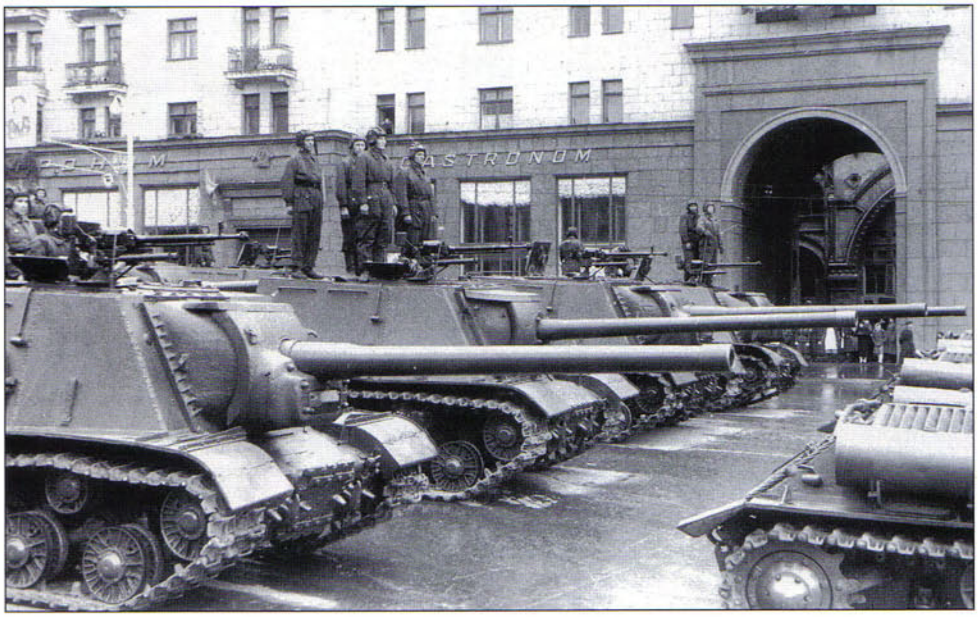
The crews of an ISU-122 Guards heavy SP artillery regiment await further instruction in the outskirts of Berlin during the April 1945 fighting. A massive amount of armored firepower was used during this battle including at least nine Guards heavy SP artillery regiments including the 334th with 47th Army, 351st with 3rd Shock Army, 396th with 5th Shock Army, 394th with 8th Guards Army, 362nd and 399th with 1st Guards Tank Army, 347th with 2nd Guards Tank Army, (all with the 1st Byelorussian Front); and 383rd and 384th Guards Heavy SP Regiments with the 3rd Guards Tank Army of the 1st Ukrainian Front.



An ISU-122 still camouflaged with tree limbs guards an intersection in Berlin on 26 April 1945. Judging from the support trucks and ambulances in the background, as well as the relative lack of debris in the streets, this is an area that the Red Army passed through days before.

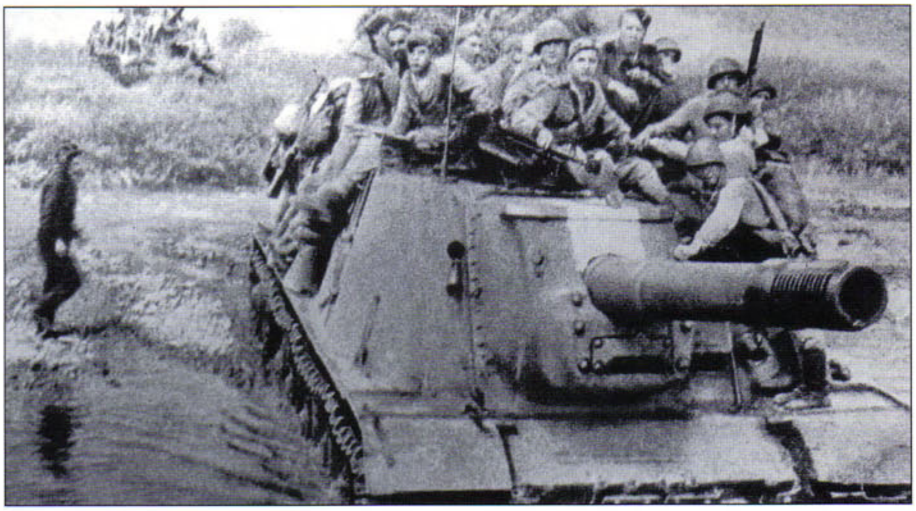
In the outskirts of Berlin, a Red Army cavalryman greets a young Russian woman returning home from forced labor in Germany. In the background is an ISU-122 assault gun. The Soviet Army did not disband its last cavalry division until 1957, having found such units very useful in forested and swampy regions of the Eastern Front during the war.

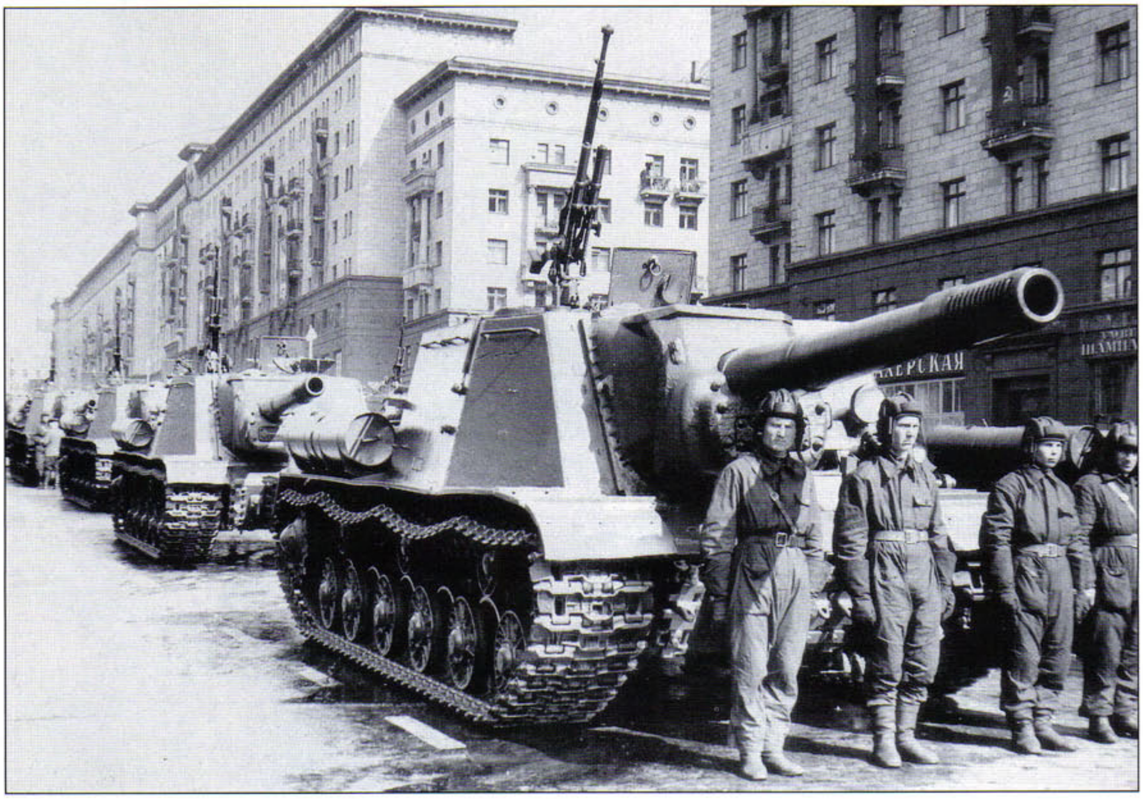




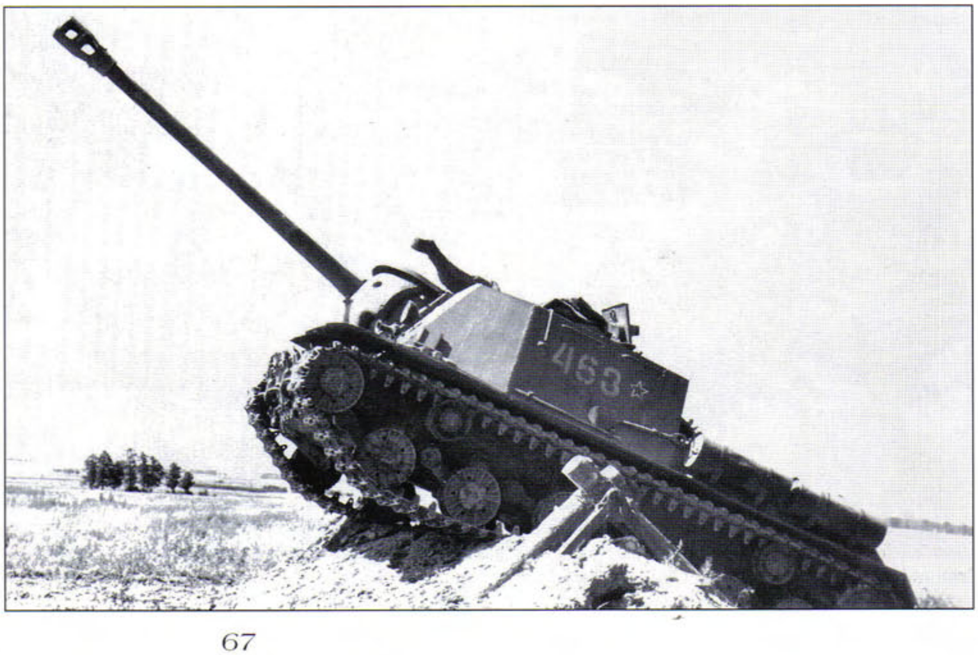
The imposing sight of companies of heavy assault guns greeted Russian spectators during the June 1945 Victory Day parade in Moscow. Here is a line up of ISU-122 assault guns on the streets leading into Red Square. In the foreground is the initial ISU-122, while behind it is an ISU-122S.

The final combat use of the Guards heavy SP artillery regiments was in the war against Japan in August 1945. Many units fresh from the European campaign were shipped by rail across Russia's thirteen time zones to take part in the invasion of Manchuria. This is one of the ISU-152 assault guns that took part, marked with the broad white band running down the center of the vehicle which was the aerial identification marking for Soviet armored vehicles during the fighting.

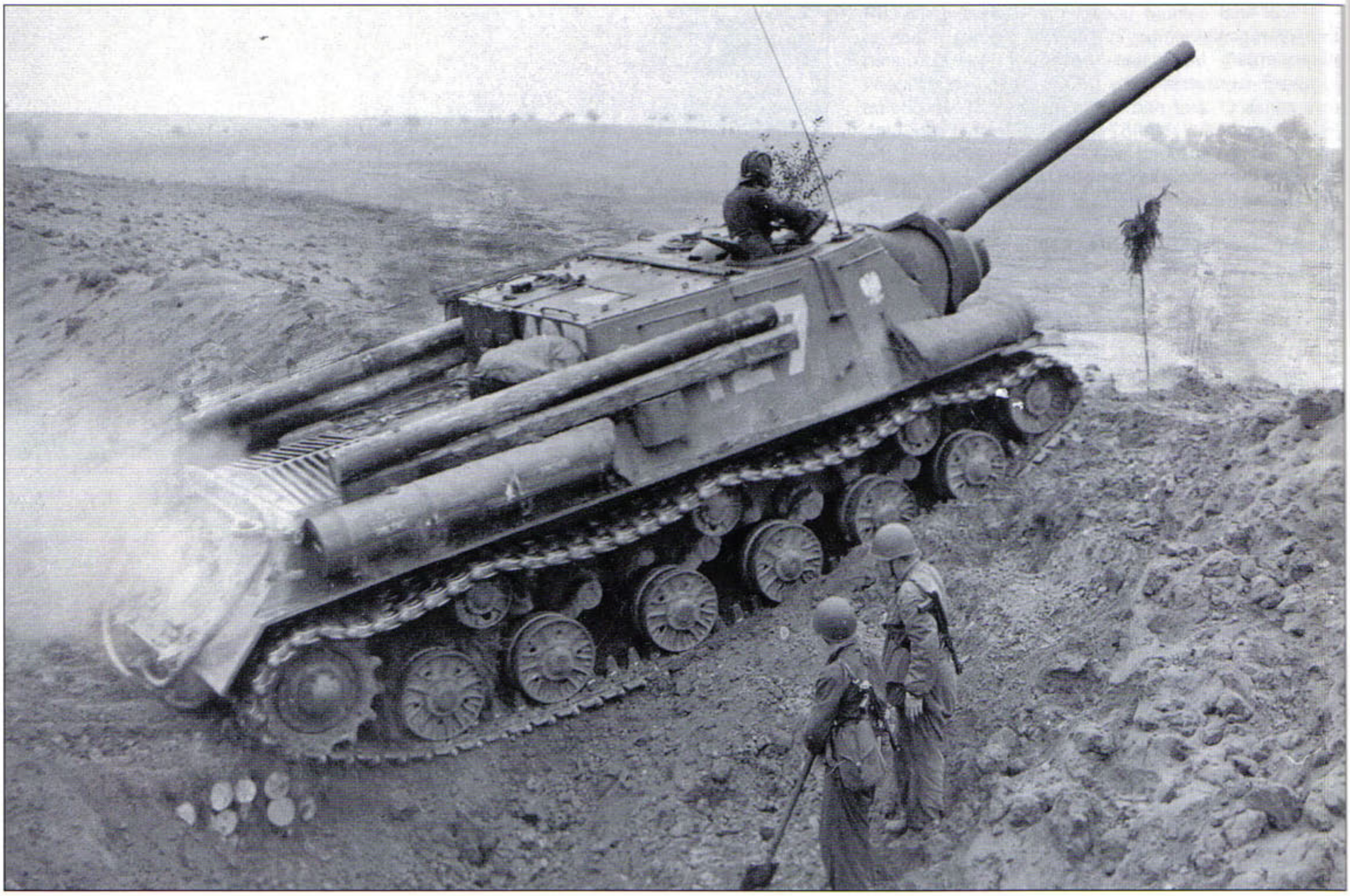




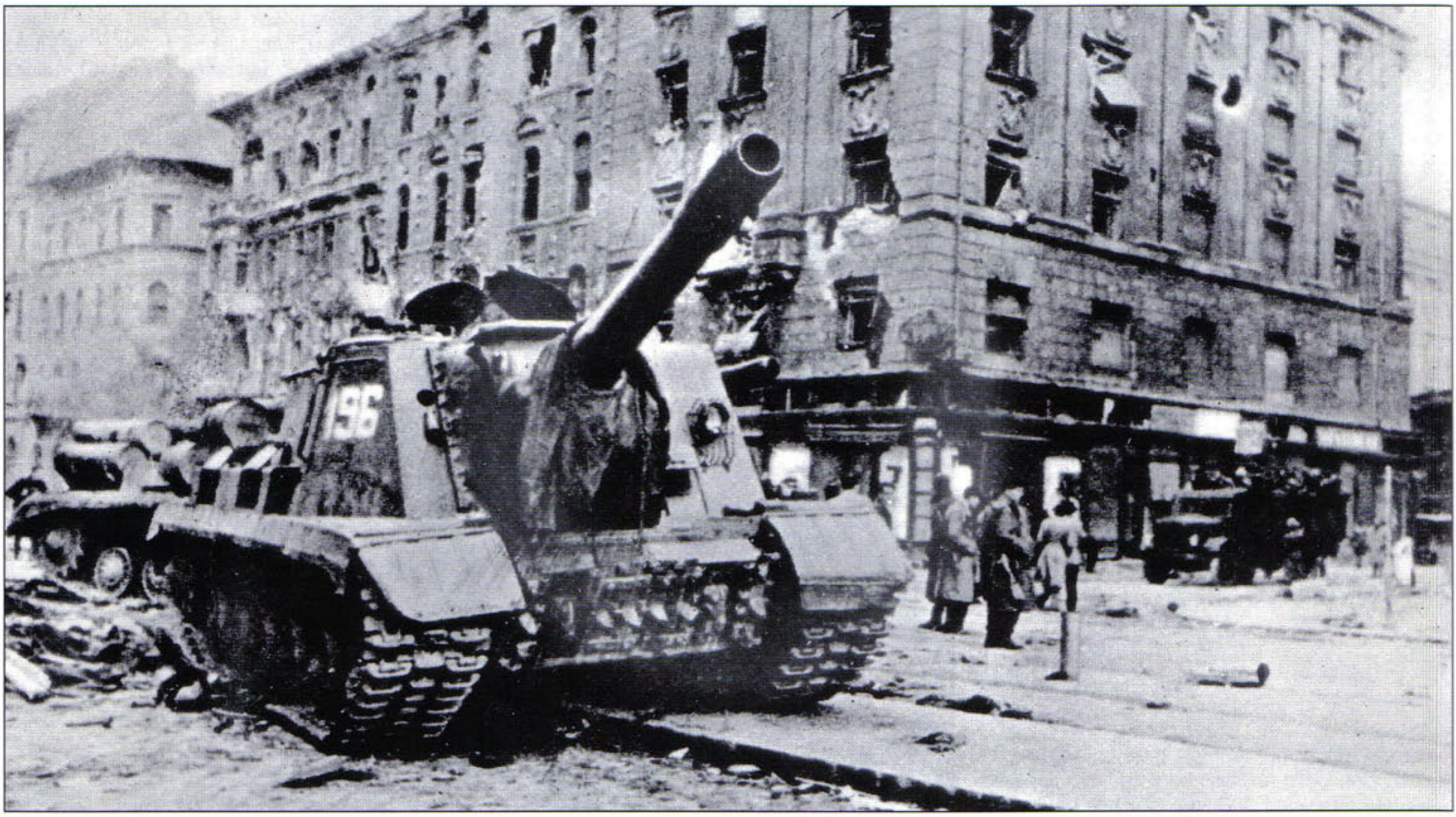
The crew of an ISU-152 await orders to move forward on the streets of Moscow during the 1947 May Victory parade. This is one of the 1945 production vehicles which has the 12.7mm DShK heavy machine gun on the hull roof.



The ISU-122S remained in Soviet units for at least a decade after the war. This is a vehicle of Northern Group of Forces on exercise in Poland in the summer of 1947.

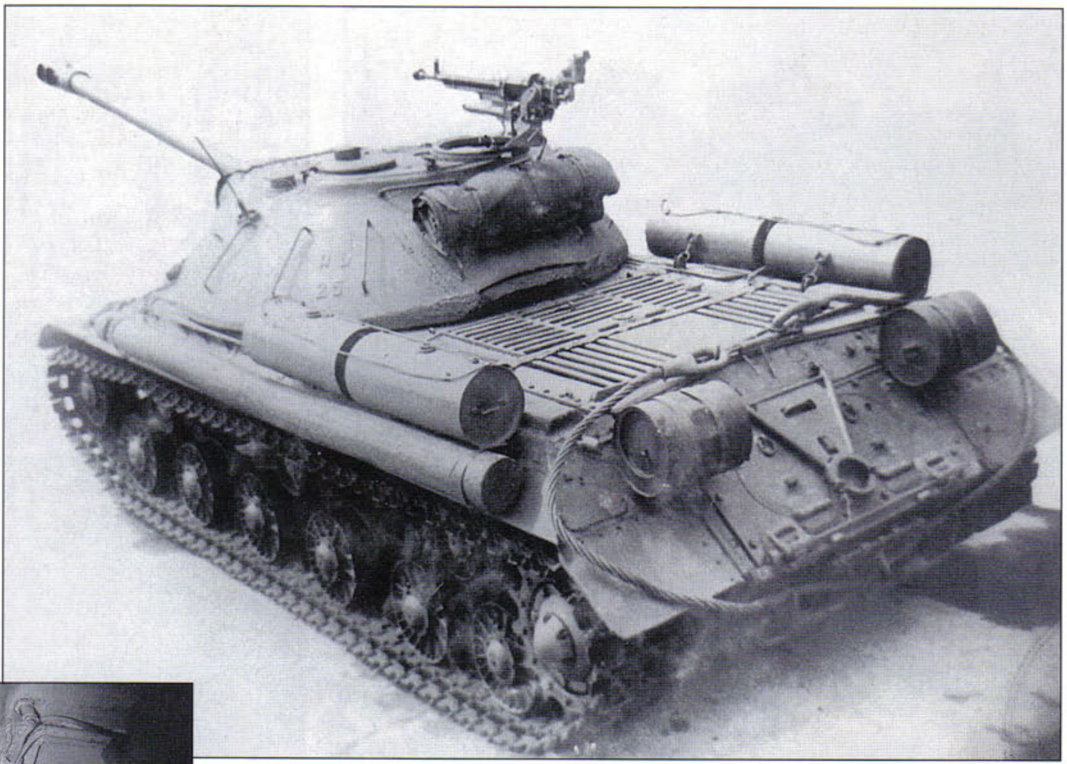


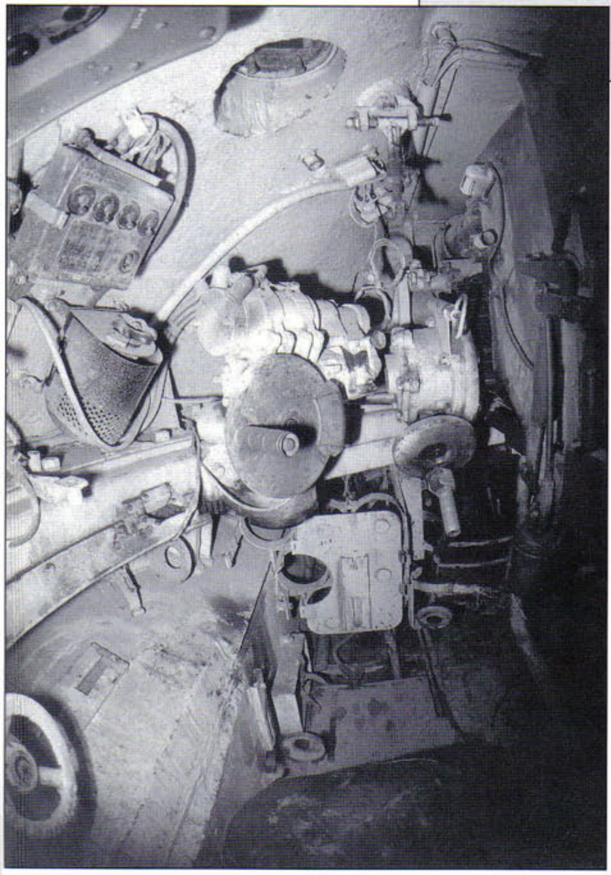
The Polish Army also kept the ISU-122 in service well into the 1960s. Here a vehicle crosses a fascine bridge laid by engineer troops to breech an anti-tank ditch during field exercises. (Janusz Magnuski)



The last known combat use of the ISU-152 with Soviet forces was the 1956 operation against Hungarian insurgents in Budapest. This ISU-152K was knocked out by Hungarian forces and probably belonged to the heavy tank/assault gun regiment of the 33rd Guards Mechanized Division. The ISU-152 remained in production until 1955, a decade after IS-2 production had ceased, and it stayed in service in the Soviet Army in dwindling numbers until the 1970s. (US Army Ordnance Museum, APG)

The IS-3 entered production in May 1945. It did not appear in time to participate in the war in Europe. However, a few regiments were dispatched to Manchuria for the war against Japan, but it is not known if they saw any actual combat. This is a fully stowed vehicle of the original production type.

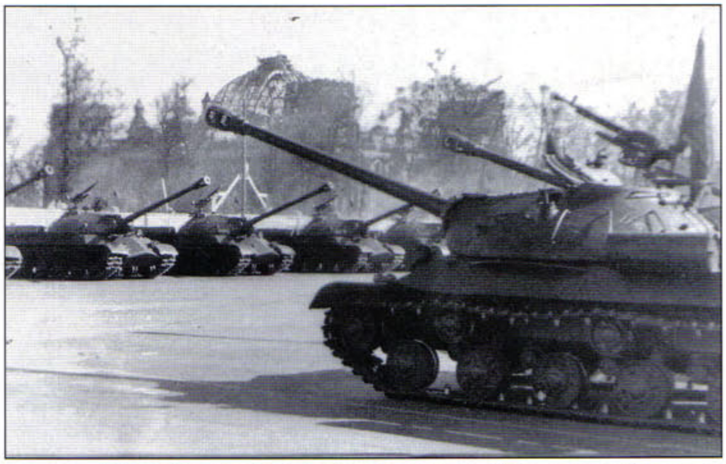




This is a view of the gunner's station in the IS-3. Although the IS-3 offered excellent turret armor, its sleek shape led to very cramped interior conditions.

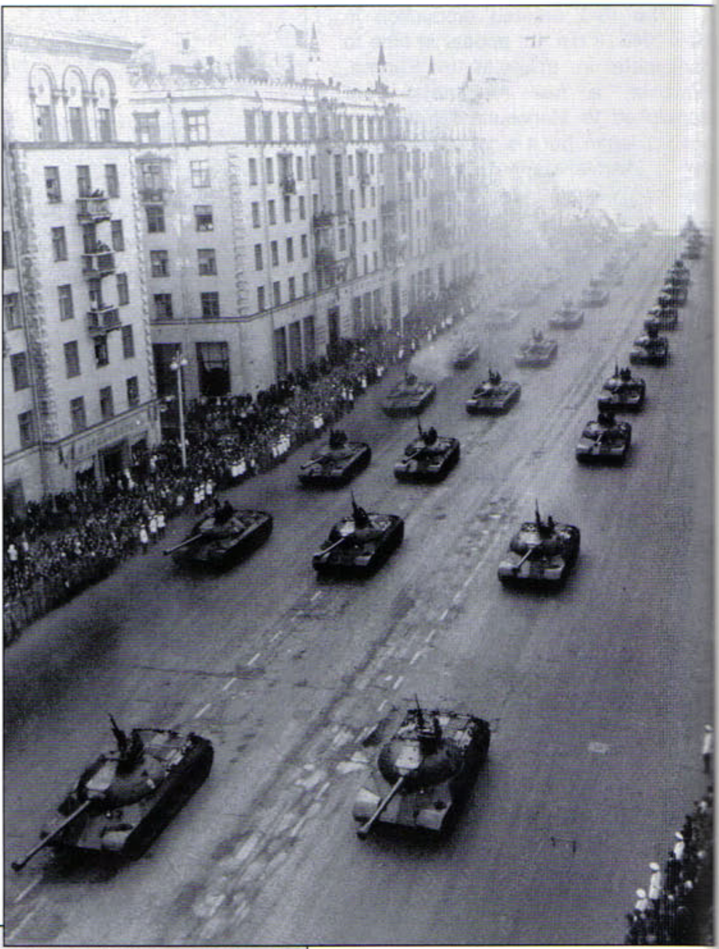
The IS-3 was not publicly displayed in Moscow until the 1946 parades. These are from the original 1945 production batches without the side stowage doors. (US Army Ordnance Museum, APG)

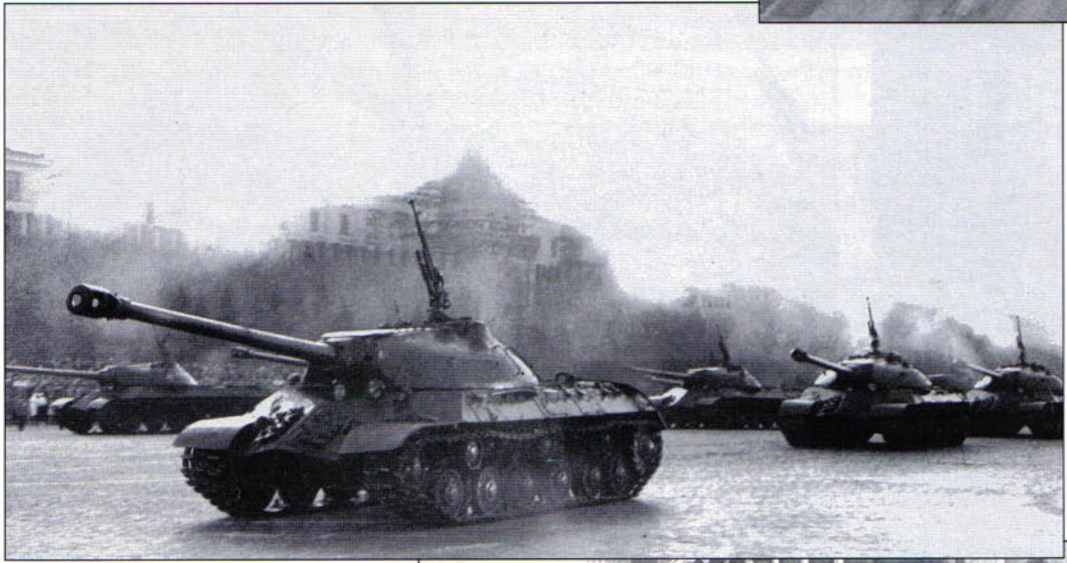
The first public demonstration of the IS-3 came on 7 September 1945 during the Allied victory parade on Charlottenburgerstrasse in Berlin with the heavily reinforced 71st Guards Heavy Tank Regiment of the 2nd Guards Tank Army. A total of 52 Stalin tanks took part, more than double the usual complement of 21 tanks per regiment. The advanced armored configuration of the IS-3 surprised the British and American observers and greatly influenced post-war tank designs such as the M48 Patton and Leopard 1 tanks. These early production IS-3 tanks differed from the 1946 production batches in that there were no tool stowage doors on the hull sides.



The IS-3 tanks involved in the September 1945 parade line up in review. Two Guards heavy tank regiments were pulled back to Moscow in April 1945 to begin re-equipping with these tanks, including the 35th, 71st and 75th Guards Heavy Tank Regiments.

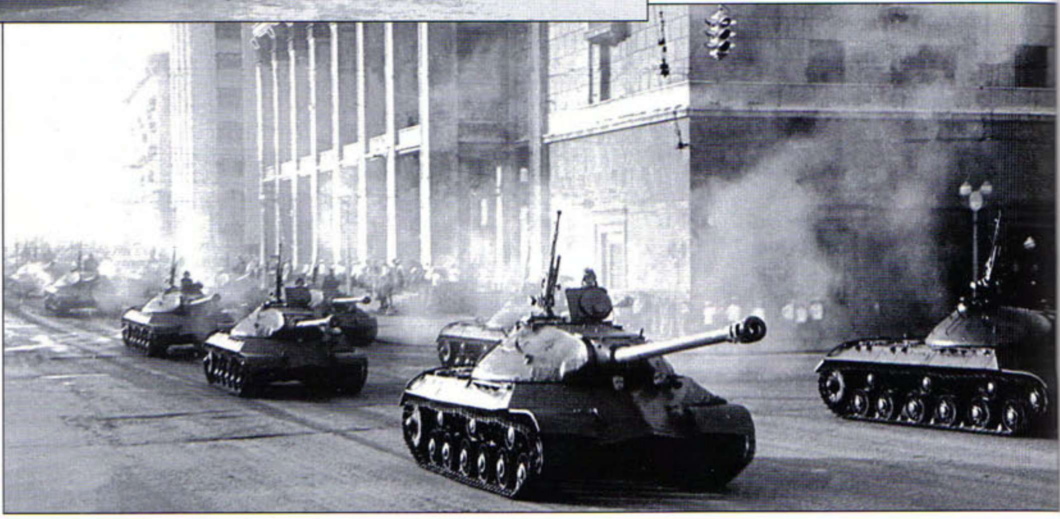
An interesting overhead shot of IS-3 tanks moving down Gorkiy Street towards Red Square in September 1946. Careful examination of the photo reveals that a few of the tanks have one-digit tactical numbers- a rare example of markings on these early tanks. The IS-3 tanks were very plainly marked even after the war as their independent tank regiments were so small that tactical numbers were felt not necessary.

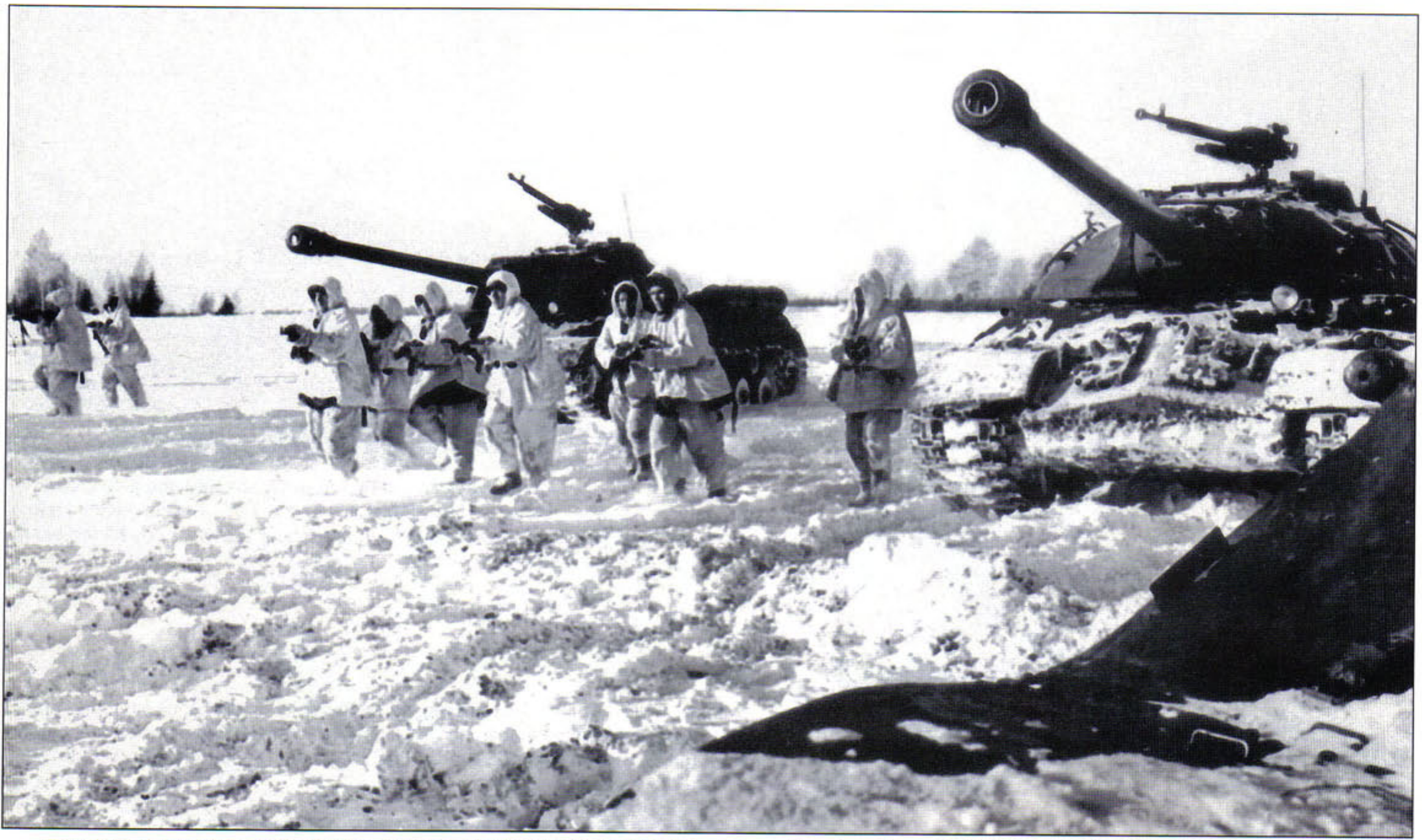




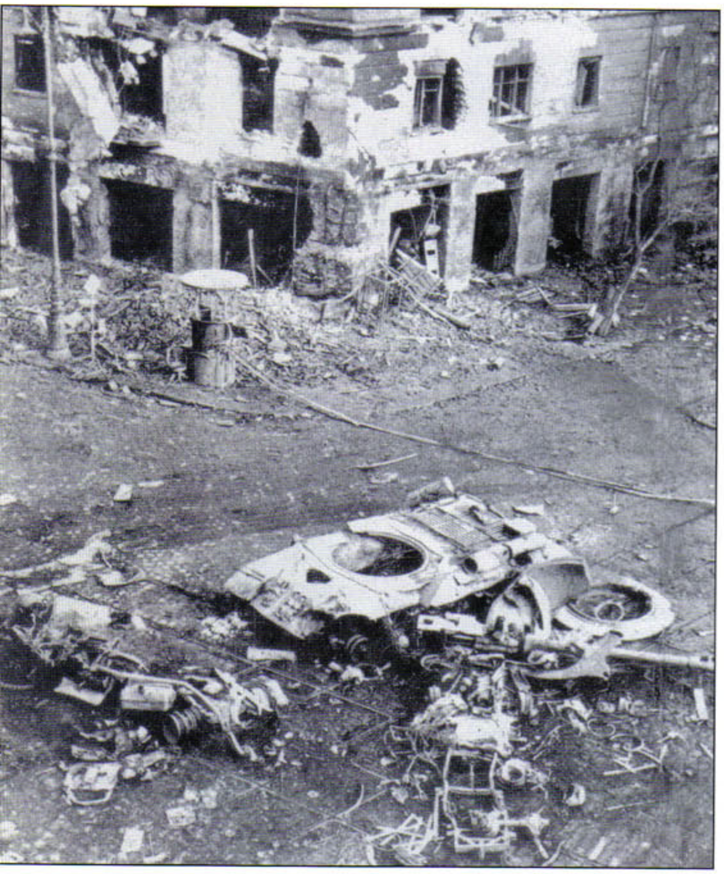
The IS-3 became a staple of Moscow parades after 1946. This is during one of their 1946 parades through Red Square, on Tanker's Day in September 1946 with the Kremlin evident in the background. These are 1946 production tanks, evident from the side stowage bin covers on the hull side.

A column of IS-3 tanks spill past the Metropol Hotel on Gorkiy Street on the approaches to Red Square for their appearance in the September 1946 Tanker's Day parade. These tanks are missing their auxiliary fuel tanks.

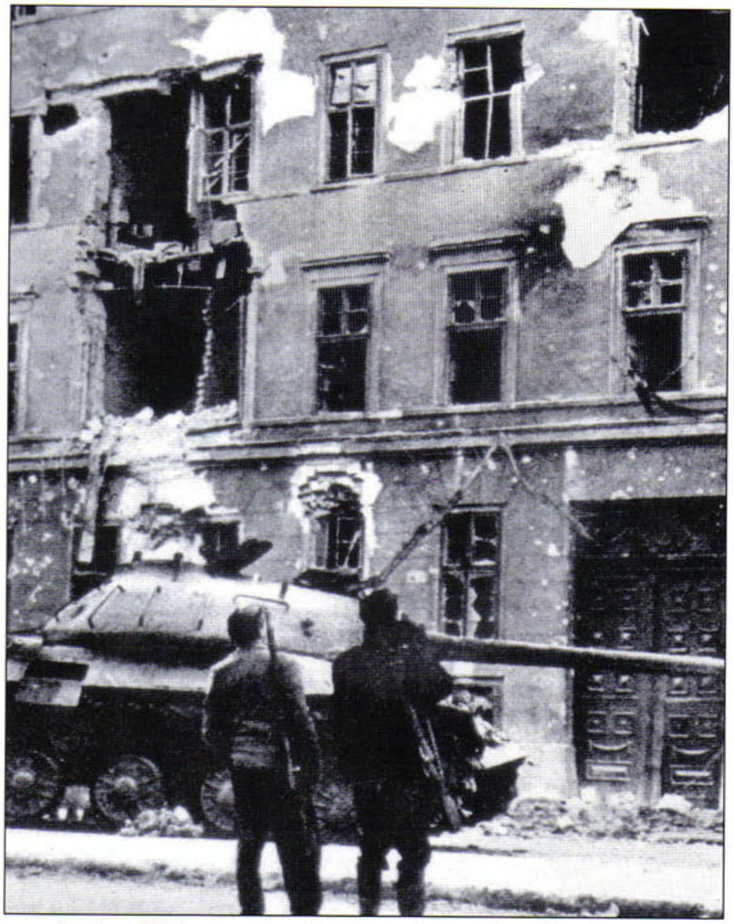




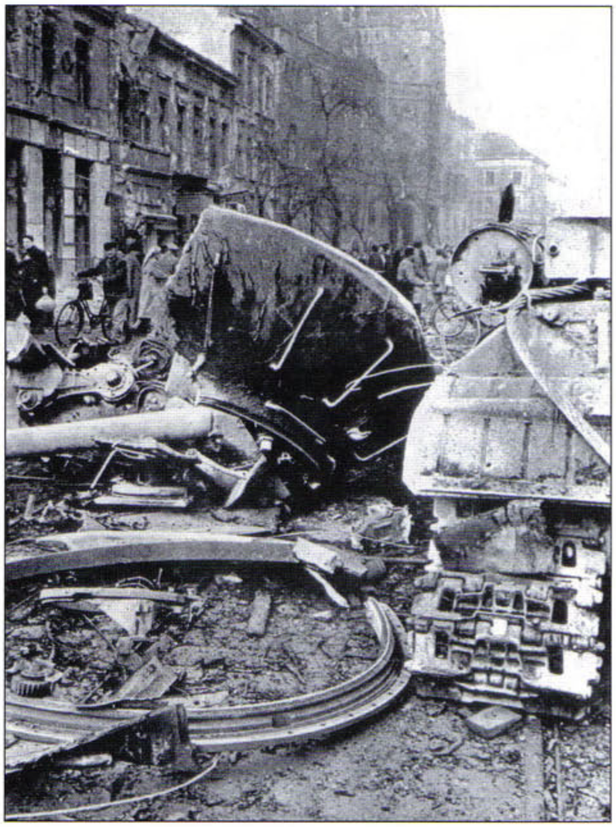
The IS-3 remained in service in European Russia through the 1950s though it was largely replaced in first-line units by 1959-60 by the newer T-10 tank. The IS-3 underwent a major rebuilding as the IS-3M in 1959, but after this its use was confined to war reserves and second-line units on the Chinese frontier. These IS-3 are on maneuvers in 1958.

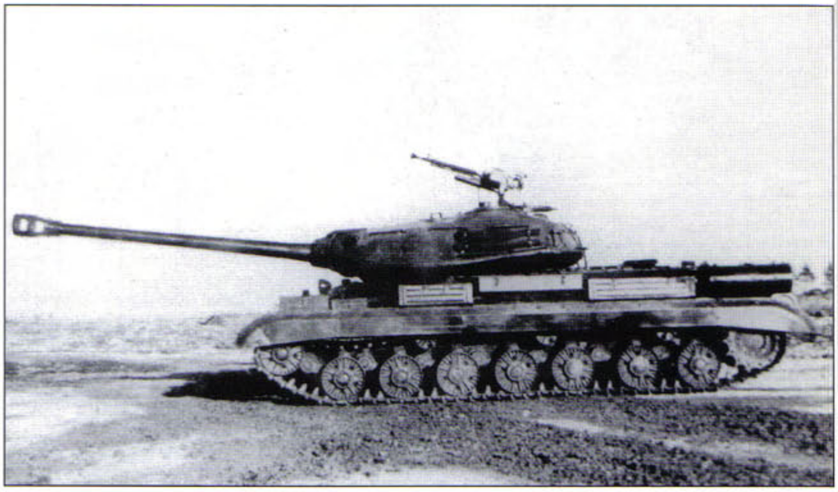


The IS-3 saw major combat action only a few times in Soviet service. This is an IS-3 knocked out during the bitter fighting against Hungarian insurgents in Budapest and probably belonged to the heavy tank/assault gun regiment of the 33rd Guards Mechanized Division. It has suffered from an internal ammunition fire which has completely lifted off its turret. (US Army Ordnance Museum, APG)



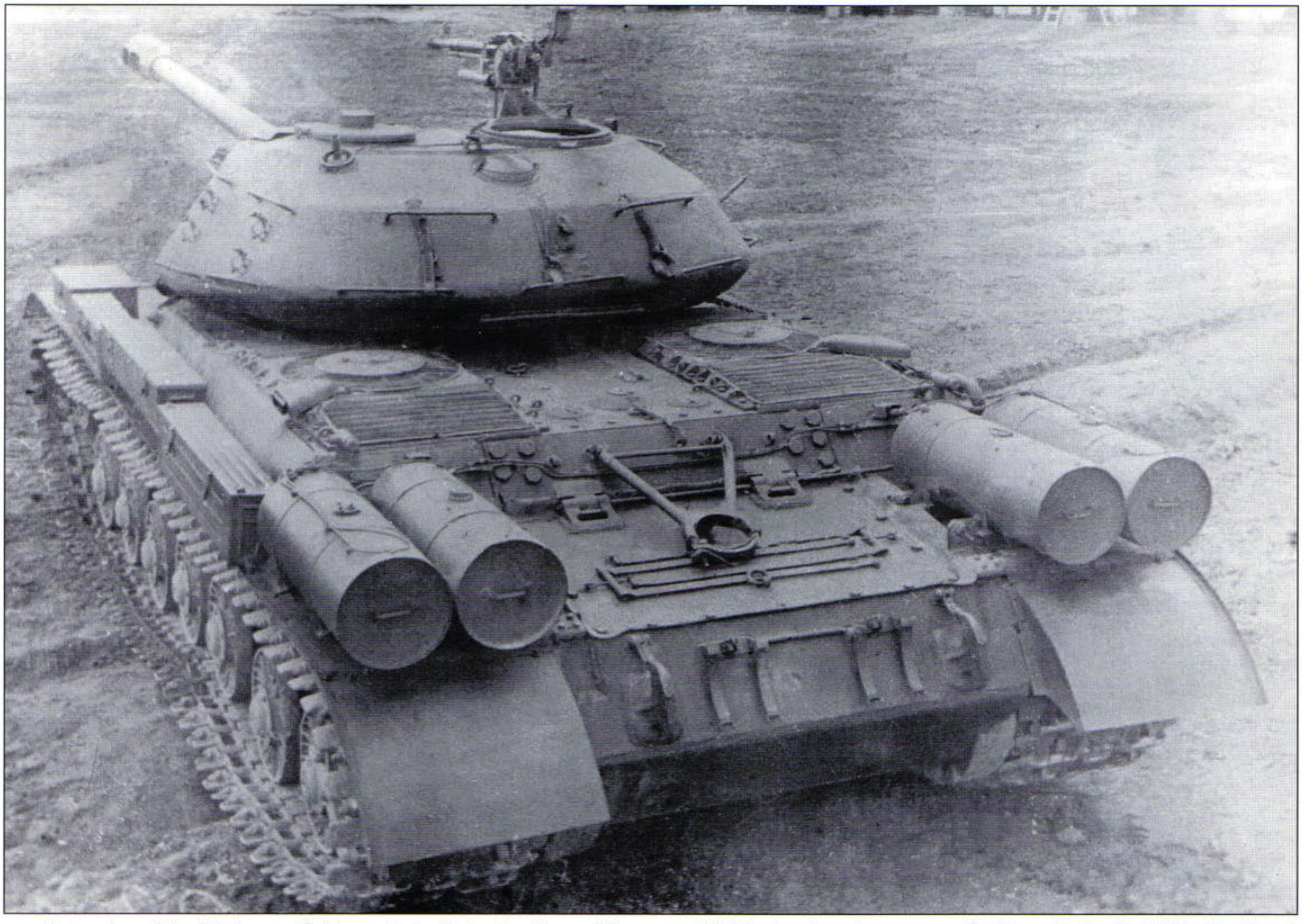
Another IS-3 is seen here knocked out near the military headquarters of the Hungarian insurgents in Budapest during the 1956 fighting. This battle also saw the first combat use of the new T-54A tank. (US Army Ordnance Museum, APG)



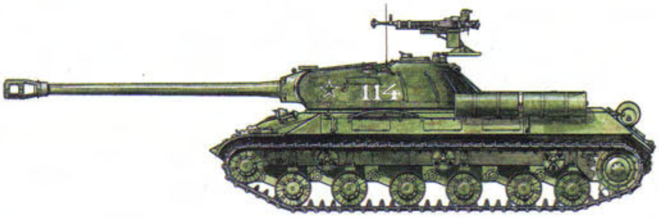


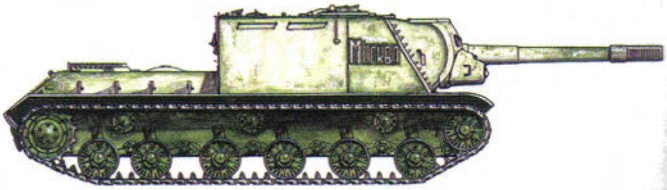
The only other heavy tank developed during the war years was the little known IS-4 heavy tank. This was viewed as an alternative to the IS-3, having better internal stowage, and a more powerful engine. However, only about 200 were completed before production halted in the late 1940s.

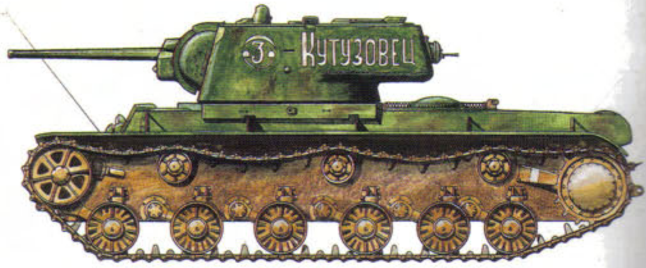
A close-up view of the IS-3 knocked out in Budapest in the other overhead photo. From this photo, it is evident that some IS-3 Stalin heavy tanks began to receive the new reinforced fenders before the 1959 rebuilding program. (US Army Ordnance Museum, APG)



A rear view of the little known IS-4 heavy tank. During the Korean War, several IS-4 tank regiments were secretly shipped to the Soviet Far East to act as the breakthrough units for a planned Soviet tank intervention on the side of the North Korean Army. Fearing US nuclear retaliation, Stalin decided against employing Soviet tanks in Korea though Soviet Air Force MiG-15 jet fighters did take part. Many IS-4s remained in the Far East until eventually retired.



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